



**FORWARD THRUST**  
**WHAT IS THE BEST**  
**ROUTE NOW FOR**  
**ROLLS-ROYCE?**  
**NEWS FOCUS P23**

**FAREWELL JUMBO**  
Ten years after production  
ended, why retirement is  
finally catching up with  
the 747-400 fleet **15**

**SINGULAR VISION**  
Cirrus is serious about  
lowering entry point for  
joining the jet set as its  
second SF50 flies **22**

# FLIGHT

## INTERNATIONAL

From  Flightglobal

9-15 DECEMBER 2014



**WORLD AIR FORCES**

## STRENGTH IN NUMBERS

We detail every nation's air power assets

£3.40







The breakthrough fighter for blue water ops.

The 5th generation Pratt & Whitney F135 engine is in production – bringing safe, proven and reliable power to the F-35 Lightning II. What's more, highly advanced engine technologies designed specifically to meet the demands of Navy blue water operations will increase readiness and reduce maintenance costs to keep the F-35 flying and projecting Navy power. Learn more at [f135engine.com](http://f135engine.com).



It's in our power.™



**Pratt & Whitney**  
A United Technologies Company





### COVER IMAGE

This formation of aircraft from Thailand, Australia and the United Arab Emirates highlights our annual World Air Forces listing. Directory **P24**



### BEHIND THE HEADLINES

Aerospace and Defence Reporter **Beth Stevenson** (above) visited **Kourou** in French Guiana, to see a new air defence **radar** enter use (P20). And our Air Transport Reporter **Edward Russell** was in **San Francisco**, for the **Ascend Finance Forum** (P12)



### NEXT WEEK FESTIVE ISSUE

Sharpen your pencils for Uncle Roger's seasonal quiz. Plus all the news from the MEBA show in Dubai

## NEWS

### THIS WEEK

- 8** Berlin asks NATO to pool its NH90s
- 9** APU short circuit sparked 787-8 fire
- 10** ICAO sets out to learn from carriers' response to Ebola.  
Europe weighs in on Norwegian access dispute
- 11** KC-46 readied for flight test.  
Moscow sets up dedicated UAV operations unit

### AIR TRANSPORT

- 12** Early adopter Finnair firms up A350s.  
Lessor predicts 2015 will be year of the CSeries
- 13** Pilots criticised in Wind Jet accident.  
Niki plans to switch from E-Jets to Airbus by June
- 14** ATR crew misread approach.  
Brazil's Azul commits to 63 A320s.  
Ryanair settles order for 100 737 Max 200s
- 15** Retirements start to whittle ageing fleet of 747-400s

### DEFENCE

- 16** Budget pressure hits Israel.  
Marines wait for King Stallion to stretch its legs.  
UK Royal Navy forms dedicated UAV squadron
- 18** Australia to start sea trials with Canberra-class carrier.  
Polish helicopter rivals get extra time to respond
- 20** Radar surveillance picks up in Kourou

### BUSINESS AVIATION

- 22** Second Vision takes flight.  
King Air 350C is just what the flying doctors ordered.  
NetJets lures owners out of owning asset

### NEWS FOCUS

- 21** Selling out of Dassault
- 23** One Rolls-Royce or two?

### OBITUARY

- 58** Jean-Paul Bechat



CH-53K King Stallion delayed by gearbox issues **P16**

## COVER STORY

- 24 Fighting on many fronts** New unrest in the Middle East has meant little respite for air arms expecting a break from combat duties following the end of the NATO-led mission in Afghanistan. We evaluate the global fleet impact in our annual census of each country's military assets

## REGULARS

- 7** Comment
- 56** Straight & Level
- 57** Letters
- 60** Classified
- 63** Jobs
- 67** Working Week



First flight for second Vision **P22**



Royal Australian Navy commissions Canberra-class helicopter carrier **P18**

Download the new **Commercial Engines Report**  
now updated for 2014 with enhanced data and in-depth market analysis  
**flightglobal.com/commengines**



## IMAGE OF THE WEEK

A Boeing B-1B Lancer from the US Air Force's 34th Bomb Squadron is shown taking part in a Green Flag-West exercise at Nellis AFB in Nevada, with a backdrop of fabulous Las Vegas. Our MiliCAS database records the service as operating 62 of the variable geometry type. See Directory P24

View more great aviation shots online and in our weekly tablet edition:



US Air Force

## THE WEEK IN NUMBERS

**22%**

Flightglobal dashboard

Ryanair's yearly rise in November passengers, to 6.35m, adding €60m to 2014 profit forecast at €810-830m

**€250m**

Airbus Defence & Space

The cost to Germany for Airbus Defence & Space to equip its military airfields with the "world's most powerful radar"

**1,000,000**

asteroidday.org

The number of asteroids big enough to destroy a major Earth city, if they hit one; about 1% have been tracked

## QUESTION OF THE WEEK

Last week, we asked: **Will cheaper fuel hurt airliner backlogs?**

You said:

**60%**

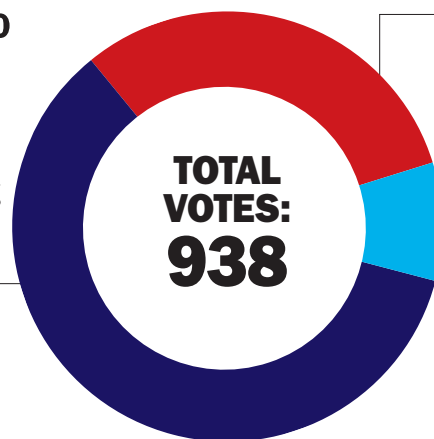
No, demand to replace aircraft too strong

**31%**

Impossible to predict future oil price

**9%**

Yes, airlines will retain older types



This week, we ask: **747-400?**

☐ Still queen of the skies

☐ Performing useful niche role ☐ Outdated 1980s relic

Vote at [flightglobal.com/poll](http://flightglobal.com/poll)



dashboard

Flightglobal's premium news and data service delivers breaking air transport stories with profiles, schedules, and fleet, financial and traffic information [flightglobal.com/dashboard](http://flightglobal.com/dashboard)



CAE offers training centres, training services, and simulation products for trainer and fighter aircraft.

Download the Military Simulator Census online now.

[www.flightglobal.com/milisim](http://www.flightglobal.com/milisim)





# Dlink+ w/CPDLC

The **FASTEST**

The **EASIEST**

The **MOST COST-EFFECTIVE**

way to meet the

Link 2000+ Mandate.



## CPDLC and ACARS

All in a single LRU

Easy to install



EASA STCs:

Airbus

A319

A320

A321

Boeing

737 Classic

737NG

757

767



Meet the Mandate with Dlink+ w/CPDLC  
[www.spectralux.com/meetthemandate](http://www.spectralux.com/meetthemandate)

**Spectralux**  
avionics



**FLIGHT**  
INTERNATIONAL

From  Flightglobal



# Inside the world of aviation & aerospace every week

**Flight International is the essential weekly magazine for aviation & aerospace professionals.**

It offers you insight into the key developments in commercial aircraft programmes, manufacturing, technology, operations & safety and defence as well as coverage from the world's top air shows.

**Flight International** gives you the knowledge & intelligence you need to make informed business decisions and gain that competitive edge – **subscribe today.**

**Subscribe to Flight International today**

 Visit: [www.flightsubs.com/1684](http://www.flightsubs.com/1684)

 Call: Overseas **+44 1444 475682** UK **0330 333 9533** quoting 1684

 Email: [flightinternational.subs@quadrantsubs.com](mailto:flightinternational.subs@quadrantsubs.com)





# A question of trust

The latest report into the failures of batteries on board two Boeing 787-8s in 2012 highlights the risks in a supply chain where design and quality assurance authority are too devolved

A pair of lithium ion batteries on the Boeing 787-8 – which should have been risk-assessment afterthoughts compared to the overall electrical system – became unexpected safety problems. Luckily, nobody was hurt and the aircraft escaped heavy damage. Why?

Despite three overlapping investigation reports issued earlier this year by Boeing jointly with the Federal Aviation Administration, the Japan Transportation Safety Board, and lastly the National Transportation Safety Board on 1 December, there has still been no clear root cause found for the internal short circuits that destroyed two batteries on separate 787-8s in January 2013.

While not definitively traced to the battery failures, NTSB investigators found GS Yuasa's production techniques for the 787 batteries had flaws that could lead to quality defects that the supplier's inspection processes were unable to detect. How could that happen? As the Boeing/FAA report last April and most recent NTSB

## Final assembly manufacturers must become more vigilant of their sub-tier suppliers

report make clear, the 787-8 suffered a failure of management. The original outsourcing model – which Boeing has since renounced – distributed design and quality assurance authority to levels of the supply chain unaccustomed and ill-equipped to perform it.

Most often, the consequences of that lack of quality assurance at subcontractor level manifested itself on the 787-8 in the form of chronic reliability problems, especially with the flight control software and the uniquely powerful electrical system.



Original outsourcing plan was strained to breaking point

The aviation industry uses a failure-tolerant certification process. A reliability problem should never lead to a safety crisis. A glitch-prone component should simply be a maintenance headache until fixed. In at least two incidents, however, design and quality problems at the sub-tier level are linked to safety incidents.

The FAA does not have resources to verify the safety of the design and production of every component on a modern widebody. It must rely on manufacturers to self-certify and monitor the integrity of on-board systems. It is clear the 787-8's original outsourcing plan strained this arrangement to breaking point.

The problem, however, is not outsourcing, but its execution. Boeing has reclaimed major elements of the 787 supply chain, but long-term trends favour continued outsourcing of yet more work. As a result, final assembly manufacturers must become more vigilant of sub-tier suppliers. And sub-tier suppliers must become more sophisticated. The 787's battery woes show what can happen if the industry fails to adapt. ■

See This Week P9

## Management strategy is pure play

London investment bank Investec has called for a thorough strategy review at Rolls-Royce. The company's directors may not take up the suggestion but, if they do, they may well conclude that their strategy is just fine as it is. But to propose other options is to raise serious questions for R-R and the aerospace industry.

Those other options include splitting R-R into two publicly listed companies along its current Aerospace and Land & Sea divisional divide, or selling off non-aerospace businesses. Either way, the civil and military engines business would become a "pure play" aerospace company, which might be very attractive to investors, who tend to like aviation's growth prospects more than more challenged marine, diesel and nuclear industries.

The best way for R-R to convince investors that the company should be kept together is to show that each business benefits from others' technologies – and from concepts such as customer service relationships. That is, R-R needs to convince investors – and customers – that the whole is more than the sum of its parts.

R-R has been going through a financial rough patch as marine and nuclear businesses struggle, so it is natural for investors to look at it more critically than they would during boom times. But with defence budgets shrinking and global economies showing signs of weakness, now is a good time for others in aerospace to review their strategies – and explain them with conviction. ■

See News Focus P23



For up-to-the-minute air transport news, network and fleet information, sign up at: [flightglobal.com/dashboard](http://flightglobal.com/dashboard)





# BRIEFING

## CLUTHA INVESTIGATORS NEAR END OF PROBE

**ACCIDENT** One year after the fatal crash of a police helicopter through the roof of the Clutha Vaults bar in Glasgow, the UK Air Accidents Investigation Branch says it is several weeks away from finishing its draft report into the incident. The AAIB will circulate its report to interested parties for comment in early 2015, and expects to publish its conclusions in around six months. Ten people were killed when the Bond Air Services-operated Airbus Helicopters EC135 T2 (G-SPA0) came down on the venue.

## UK EXEMPTS CHILDREN FROM AIR PASSENGER DUTY

**TAXES** The UK government is exempting children under the age of 12 from the country's air passenger duty flight tax from 1 May 2015. APD exemption will extend to under-16s the following year, in a move finance minister George Osborne says will reduce the cost of flying for families. Airlines welcomed the development, but questioned whether it goes far enough.

## USAF TOASTS WHISKEY CHOICE FOR NEW HH-60

**NAMING** The US Air Force has chosen HH-60W as the designation for its future fleet of up to 112 Sikorsky UH-60M Black Hawk-derived combat rescue helicopters (CRHs). A system requirements review for the "60-Whiskey" is due to occur in fiscal year 2015, with the model to start replacing the service's HH-60G Pave Hawks from fiscal year 2019, under an acquisition worth a potential \$7.9 billion.

## IATA: FALLING OIL PRICES CUSHIONING AIRLINES

**OUTLOOK** IATA sees falling oil prices providing "a much-needed operating cushion for airlines" and says the outlook for air travel is "positive" after passenger demand rose 5.7% in October. Improving economies in Asia-Pacific and the USA offset weakness in the eurozone and China, says IATA. However, it warns that "sluggish demand for oil in key markets could indicate a broader economic slowdown", and is concerned by "rising political instability".

## CHINESE LESSOR MOVES INTO DISASSEMBLY

**END OF LIFE** China Aircraft Leasing Group has signed a memorandum of understanding with the Harbin government to set up an aircraft disassembly operation in the city. The firm says it intends to invest \$2 billion, which will also include the cost of purchasing old aircraft, to set up the new business. The government of Harbin has agreed to provide assistance to the group, including the granting of land use for the project.

## CIT FIRMS FARNBOROUGH A330NEO COMMITMENT

**ORDER** US lessor CIT has firmed an order for the re-engined Airbus A330, cementing a deal for 15 of the -900neo along with a batch of five A321s. The leasing firm had tentatively signed for the A330neo during the Farnborough air show in July. Airbus formally launched the A330-800neo and -900neo at the event. The type will be powered by Rolls-Royce Trent 7000 engines.

## IRANIAN PHANTOMS TARGET ISLAMIC STATE

**COMBAT** Iran has conducted its first air strikes against Islamic State targets in eastern Iraq using some of its McDonnell Douglas F-4 Phantoms. Acknowledging reports of Tehran's action, the US Department of Defense clarifies that it is "not co-ordinating with nor deconflicting with the Iranian military" during the wider campaign to target the militant movement in Iraq and Syria.



Shortages of transports in Afghanistan in part inspired the plan

**ROTORCRAFT** DOMINIC PERRY LONDON

# Berlin touts NH90 pool for NATO use

Germany proposes multinational helicopter unit as part of broader deal with Airbus Helicopters to scale back orders

Germany is proposing that 22 NH Industries (NHI) NH90 troop transport helicopters it currently has on option could be acquired and used to form a pool of rotorcraft to be shared by NATO partners.

The concept, which Berlin calls the "multinational helicopter unit", is part of a broader framework agreement that the nation's defence ministry has hammered out with Airbus Helicopters as it looks to formalise planned cuts to its overall NH90 and Tiger attack helicopter orders.

Germany initially committed to buying 120 TTH-variant NH90s, but in 2013 concluded a memorandum of understanding with the airframer – which is the majority shareholder in the NHI consortium – to cut its acquisition to 80 units, plus 22 options. It also proposed to take 18 examples of the NFH model for delivery to its navy from 2018.

The new pact must pass before Germany's parliament for approval before a binding contract can be signed. German defence officials hope that the proposal can be debated by politicians either late this month or during January, leading to a firm decision in early 2015.

The defence ministry says a shortage of transport helicopters that afflicted the NATO-led Inter-

national Security Assistance Force mission in Afghanistan was in part the inspiration for its plans for the shared resource. "By doing this, we create an opportunity for smaller countries, which would not be able to support an NH90 fleet on their own, to participate in this capability and have it on a smaller scale," it notes.

So far, it has made approaches to 20 NATO members, and has received a "two-digit number of positive responses", the defence ministry reveals. Berlin proposes making a "significant contribution" to supporting the pooled helicopters, which would be located at one of its current army bases for the type, allowing partners to take advantage of the maintenance facilities already in place.

As part of the same pact, Germany is to retain 11 early production examples of the Tiger UHT for use as a source of spares. Airbus Helicopters had previously been expected to buy them back, as part of an overall orders reduction from 80 to 57 examples. Berlin will cap its operational fleet of Tigers at just 40 examples, however.

The defence ministry declines to give a figure for the total acquisition cost, but it is thought to be in the region of €8 billion (\$10 billion). ■

See Directory P32



ICAO sets out to learn from carriers' response to Ebola  
**THIS WEEK P10**

**THIS WEEK**

**INVESTIGATION** JON HEMMERDINGER WASHINGTON DC

# Report lists failings behind 787-8 fire

NTSB sheds new light on shortcomings in oversight by FAA, as well as inadequate manufacturer guidance to suppliers

The US National Transportation Safety Board concluded on 1 December that a thermal runaway in a lithium-ion battery caused the 7 January 2013 fire in a Japan Airlines Boeing 787-8.

"The probable cause of this incident was an internal short circuit within a cell of the APU [auxiliary power unit] lithium-ion battery, which led to thermal runaway that cascaded to adjacent cells," says the NTSB's report into the incident.

While its conclusion was no surprise to the aviation industry, the NTSB shed new light on what it described as major breakdowns in the regulatory-manufacturing chain.

The fire resulted partly from insufficient oversight by the Federal Aviation Administration, which had failed to recognise the thermal runaway potential and did not require thermal runaway tests. Likewise, Boeing provided insufficient guidance to Thales, which designs 787 electric systems, and to GS Yuasa, which builds the batteries, says the report.

Boeing conducted no audits of GS Yuasa prior to the incident, but discovered 17 non-compliance items in post-incident in-

spections of both companies, the NTSB says. Boeing's battery safety assessment also assumed – without justification – that short circuits in one cell would not spread to others. It also did not consider the consequence of its assessment being incorrect, the report says.

Thales failed to properly oversee GS Yuasa, which used a manual process that can create wrinkles in electrodes which can cause short circuits. The latter also did not properly shield an assembly area from airborne debris, which can contaminate components.

"GS Yuasa did not test the battery under the most severe conditions possible in service, and the test battery was different than the



**Compliance issues at Thales and GS Yuasa emerged after the event**

final battery design certified," the report concludes.

Boeing says it agrees that "a short circuit within one battery cell led to venting and cell-to-cell

propagation that caused the battery failure", but adds that it remains confident in subsequent battery improvements, and in the overall safety of the 787. ■

## DATA

### Unreliable flight recorder criticised for delaying inquiry

Among the findings of the National Transportation Safety Board's report into a Boeing 787-8 fire last year is criticism of the aircraft's enhanced airborne flight recorder (EAFR).

The NTSB says "stale data" generated by the General Electric-made device, which records both cockpit voice and flight data, delayed its investigation. It attributes this to the device

recording data at predetermined intervals, but continuing to record last known values when some data sources stop sending information.

"This recording methodology can lead to cases in which apparently valid data continue to be recorded after a parameter source stops providing valid data," it says. "This problem delayed the NTSB's complete

understanding of the recorded data."

Audio picked up by the EAFR's cockpit area microphone was also poor in quality. "Almost all of the individual crew conversations were completely obscured by the ambient cockpit noise" during the flight, says the report, which urges the Federal Aviation Administration and Boeing to correct the issues. ■

**SPACEFLIGHT** DAN THISDELL LONDON

# Ariane 6 partnership counts down to lift-off for ESA

Europe has outlined a clear vision of its place in space, giving a further green light to the Ariane 6 launcher and confirming its intention of joining the USA in keeping the International Space Station flying through 2024.

Government ministers of the European Space Agency's 20 member countries meeting in Luxembourg on 2 December also determined to ensure that ESA's 2016 and 2018 ExoMars robotic exploration missions are fully funded, and reaffirmed their intention that it should be a "criti-



**Ariane 6 will cut launch costs**

cal path" partner to NASA and other space agencies in international efforts to explore the

Moon, bring samples back from Mars and, eventually, send humans beyond the ISS's low-Earth orbit.

Ministers also gave their blessing to a plan by Airbus and Safran to form a joint venture to consolidate the Ariane programme. Airbus Safran Launchers will incorporate ESA launch operator Arianespace and those elements of France's CNES space agency directly linked to launcher procurement and operation.

First announced earlier this year, the move is designed to

keep Ariane competitive with US upstart SpaceX by adopting a cost-efficient industrial structure, in place of a politically-inspired system that doles out launcher workshare in rough proportion to ESA member states' budget contributions.

Ariane 5 launches cost €150-200 million (\$192-256 million) each, and Arianespace still needs public subsidy to break even. With a new modular, solid-engine design, each Ariane 6 is supposed to fly for around €70 million per launch. ■





REGULATION KERRY REALS LONDON

## Europe weighs in on Norwegian access dispute

US regulators have been accused by the European Commission of “taking too long” to make a decision on whether to grant Norwegian Air International (NAI) a permit to operate transatlantic flights.

Norwegian’s application to serve points in the USA through its Ireland-based NAI subsidiary has met significant opposition from US airlines, politicians and union representatives. They believe it is an attempt to circumvent Norway’s labour laws; a charge that the Oslo-based carrier has repeatedly denied.

Now the European Commission seems to be running out of patience, noting that it “considers that there is a breach of the EU-US air transport agreement by the US authorities, regarding the application from Norwegian Air International to fly to the United States”.

EU and US officials met in Washington DC to discuss the issue on 25 November, and will meet again in January 2015.

Norwegian is currently wet-leasing aircraft to serve New York and Fort Lauderdale while it waits for its permit to be granted. The carrier plans to transfer these flights to NAI, but has been waiting for a decision from the US Department of Transportation since filing an application in late 2013. ■

INFECTION DAVID KAMINSKI-MORROW LONDON

## ICAO sets out to learn from carriers’ response to Ebola

Aviation authority points to urgent need for improved co-operation with health groups

ICAO is bemoaning the absence of a mechanism to collect and share data that would enable the aviation sector to manage its response to a public health crisis such as the Ebola outbreak more efficiently. None of several recent health events – including the spread of SARS and swine influenza – has “better demonstrated” the need for effective collaboration between the aviation and public health sectors, it says.

“At present there is no system in place that provides for the collection of [event] data, or its sharing between different stakeholders,” ICAO says, in a paper prepared for its high-level safety conference in February.

Several airlines cancelled services to affected countries in western Africa when Ebola emerged, citing a variety of reasons – among them commercial viability, inadequate crew care facilities and transmission risks. The World Health Organisation (WHO) says this resulted in delays in transporting health workers and medical supplies to those regions.

ICAO says that contrary to WHO recommendations, a number of countries also issued general flight and passenger bans.

“This affected not only commercial passenger flights, but



Rex Features

ICAO says that health events affecting aviation emerge regularly

also air ambulance and humanitarian flights. Some aircraft captains were reported to have refused to carry properly-packaged biological samples being sent for specialised laboratory analysis,” it adds.

Although it recognises the usefulness of its collaborative prevention and management arrangement, known as CAPSCA, ICAO says health event prepared-

ness in the aviation sector has “not been generally seen as a priority”. It points out that public health events serious enough to affect international civil aviation have been emerging every two or three years for the past 14 years.

“It is likely this rate will continue, or possibly increase, as passenger numbers grow and the world becomes more interconnected,” it adds. ■

### DELIVERY

## Qatar sets date for A350 acceptance

Qatar Airways is to take delivery of its first Airbus A350-900 in Toulouse on 13 December; about one month before the aircraft will enter service on the Doha-Frankfurt route. The Rolls-Royce Trent XWB-powered aircraft is the first of 43 of the type ordered by the Middle Eastern carrier, which also has 37 -1000 examples on order.

“Arrival of this new generation of aircraft type represents a moment of great symbolic national pride for the state of Qatar,” says chief executive Akbar Al Baker. “I know its delivery will be met with excitement at its new home, Hamad International airport, which was built for advanced aircraft types such as this.” Qatar Airways’ reservations system indicates that the A350 will be deployed to Frankfurt on 15 January 2015.



Airbus



Eight more  
Airbus A350s  
for Finnair  
**AIR TRANSPORT P12**

**PROGRAMME** DAN PARSONS WASHINGTON DC

# KC-46 readied for flight test

Boeing's prototype tanker is rewired to FAA standards and prepared for sorties in 2015

The first prototype of Boeing's KC-46 aerial refuelling tanker has been rewired to US Air Force standards, and is being prepared to make its first flight in "late spring" of 2015, says chief operating officer Dennis Muilenburg.

"We're doing final prep for first flight," Muilenburg said during a Credit Suisse Global Industrials Conference in Chicago on 3 December. "We are feeling good about where that programme is at. Now we'll focus on executing the flight test programme under development and then getting the programme into production."

Boeing earlier this year alerted the air force to "anomalies" in the aircraft's wiring, which must be triple redundant to meet military and US Federal Aviation Administration specifications. Boeing's wiring audit found about 5% of the aircraft's 98,000 wiring bundles were installed too close to redundant counterparts, and its first four engineering and manufacturing development (EMD) aircraft had to be rewired.

"Those have now been resolved and closed out," Muilenburg says. "That airplane is done."

**The USAF requires at least 179 of the type, with the first 18 to be operational by 2017**



Boeing

[It] has rolled out of the factory."

Derived from Boeing's commercial 767 and powered by two Pratt & Whitney PW4062 turbofan engines, the KC-46A can be configured to accommodate cargo, carry up to 114 passengers, or serve as an aero-medical evacuation aircraft.

Boeing's first test aircraft has been fuelled in preparation for flight testing and is on the flight line, Muilenburg says. The USAF is expected to make a so-called Milestone C decision within the following three months on whether to approve low-rate initial production, with Boeing required to deliver the

first 18 operational tankers by 2017.

"We're very confident that we will hit the mark" on all three deadlines, Muilenburg says.

Boeing says a provisional test 767-2C – a freighter variant of the aircraft – and the first EMD-phase KC-46 are scheduled to fly in the second quarter of 2015; slightly later than a March first flight date previously given by the air force.

The USAF needs at least 179 KC-46 tankers, which gives Boeing a "long, strong production profile", Muilenburg says. Potential international demand could increase total orders to 400 or 500 aircraft, he adds. ■

## SURVEILLANCE

# Moscow sets up dedicated UAV operations unit

Russia has established a dedicated unmanned air vehicle unit in its eastern region of Chukotka, a report by the state-owned Sputnik news agency says.

Formed at the Ugolny military and civilian airfield, the unit should receive a number of indigenously-designed Orlan-10 air vehicles for surveillance use by the end of this year, Sputnik says, quoting an eastern military district official.

Flight testing is expected to take place from early 2015, initially by industry personnel, before the military is fully trained on the aircraft.

On 20 May, Russia's defence ministry said it would invest some \$9.2 billion on UAVs by 2020. The nation's armed forces in August began assembling six Russian-built Forpost UAVs, which are required to carry out patrol missions over the Kamchatka peninsula from early 2015, Sputnik says.

The Forpost is a development of Israel Aerospace Industries' Searcher I air vehicle. ■



**Production, Spares and MRO for  
Business, Commercial and Military Aircraft**

Under license or acquisition, Ontic supports your customers by  
providing OEM-pedigreed product for as long as there is a need.  
Value for the OEM. Value for the customer.

# EXTENDED LIFE SOLUTIONS



Avionics, Electronics, Hydraulics, Fuel, Electromechanical, Measurement/Control, Heat Transfer, Power, Landing Gear, Engines, APUs. OEM partners include Hamilton Sundstrand, Honeywell, GE Aviation, Goodrich, Woodward, Parker, Eaton, and many more.



*A BBA Aviation company*

(+1) 818 678 6555      ontic.com





**NARROWBODIES** EDWARD RUSSELL SAN FRANCISCO

## Lessor predicts 2015 will be year of the CSeries

**M**acquarie Air Finance chief executive John Willingham predicts a large wave of interest for the Bombardier CSeries next year, despite the so far sluggish sales of the Canadian narrowbody.

He cites the fact that the larger CS300 variant is optimised for

the 130-seat narrowbody segment unlike competitor aircraft and despite a 4,000-strong in-service fleet globally in this segment.

Speaking at the Ascend Flightglobal Consultancy Finance Forum in San Francisco,

he said: "[The CS300] is the one aircraft that is targeted at a market with 4,000 airplanes and optimised."

Macquarie has firm orders for 40 CS300s and options for another 10 aircraft that it firmed in September.

The Airbus A319 and Boeing 737-700 dominate the 130-seat market today, though neither is optimised for the segment, says Willingham. Both are shrunken variants of their larger siblings the A320 and 737-800, respectively, and weigh more than is ideal for the market.

Sales of the CSeries have lagged due to airline concerns over issues surrounding "paper" aircraft programmes, says Willingham. He cites issues with the CSeries programme as well as with the introduction of the Boeing 787, which he says Boeing

"stuffed up", for these concerns.

"I predict that 2015 is the year that the world realises the overwhelming value of the CSeries," he says.

Bombardier has firm orders for 243 CSeries, options for 162 aircraft and letters of intent for 115 more, Flightglobal's Ascend Fleets database shows.

Willingham says that it has yet to sign any leases for its CS300s, which will begin arriving from Bombardier in 2017.

The CSeries flight-test programme resumed in September after a 100-day hiatus. The stop followed an uncontained failure of a Pratt & Whitney PW1500G geared turbofan engine on flight test vehicle one (FTV-1), a CS100, in May.

The airframer expects to deliver the first CS100 in the second half of 2015. ■



The Canadian airframer hopes to begin CS100 deliveries in 2015

**UPGRADE** DAVID KAMINSKI-MORROW LONDON

## Early adopter Finnair firms up A350s

Flag-carrier will use some of the 19 Airbus widebodies it has on order to replace its seven A340-300s by end of 2017

**F**innair has converted options on eight more Airbus A350s to firm orders, with deliveries of the jets to begin in 2018.

The agreement raises to 19 the number of A350s due to the One-world carrier.

Finnair says it is intending to withdraw its seven Airbus A340s by the end of 2017 as the A350s enter the fleet.

As part of the agreement, it says, Airbus has agreed to acquire four of its A340-300s in 2016-17.

Finnair was one of the first operators to order the A350, initially agreeing to take the type in 2006.

A350s are available only with Rolls-Royce Trent XWB engines.

Chief executive Pekka Vauramo says the A350 will be "essential" to its long-haul development strategy, and firming the options "demonstrates our commitment to growth".

He adds that the A340 swap with Airbus "ensures a smooth transition" between the old and new aircraft, "mitigating potential business continuity risks".

Under its long-haul modernisation programme, Finnair will take its first four A350s in the second half of next year. Another seven will be delivered over 2016-17, with the remaining eight arriving over 2018-23.

Finnair also uses eight A330s for long-haul operations. The carrier, which has arranged sales and leaseback for four A330s and two A350s, says it is evaluating financing options for the other A350s. ■

Finnair was one of the first operators to commit to the A350 in 2006



**HANDOVER** AARON CHONG SINGAPORE

## Tianjin delivers 200th A320 family jet

Airbus has marked the 200th Airbus A320 family aircraft assembled at its Chinese final assembly line (FAL) in Tianjin, handing over an A319 to China Eastern Airlines.

Inaugurated in 2008, the FAL is a joint venture between Airbus, AVIC and Tianjin Free Trade Zone. It is the third A320 family assembly centre after Hamburg and Toulouse, and

the first outside of Europe. The first aircraft delivered from the line was handed over in 2009.

Earlier this year, Airbus, AVIC and TJFTZ agreed to extend its operations for another decade, from 2016 to 2025. The extension will include the final assembly of the re-engined A320neo family from 2017 onwards for delivery to Asian customers. ■

**The new widebody is "essential" to the airline's long-haul development strategy**

**PEKKA VAURAMO**  
Chief executive, Finnair



ATR crew misread approach in deadly Lao Airlines crash  
**AIR TRANSPORT P14**

**INQUIRY** DAVID KAMINSKI-MORROW LONDON

# Pilots criticised in Wind Jet accident

Investigators cite 'deliberate disregard' of procedures as poor-weather descent continued without runway being sighted

**P**ilots of a Wind Jet Airbus A319 landed far short at Palermo after deciding to continue a non-precision approach at night, in poor weather, despite failing to sight the runway.

Italian investigation authority ANSV has determined that the pilots in the 4 September 2010 incident demonstrated a "poor attitude" towards crew resource management and failed to maintain a sterile cockpit during the descent or carry out proper approach briefings.

The aircraft landed 367m (1,200ft) short of the runway 07 threshold and skidded for 850m, suffering such extensive damage that the twinjet was written off.

ANSV says there was "deliberate disregard" for procedures at the point of reaching the minimum descent altitude, when the crew is supposed to confirm sighting of the runway – and execute a go-around if it cannot.

The aircraft crossed the minimum altitude of 710ft and the captain urged the first officer, who was flying, to continue the



The former carrier operated a fleet of A319s and A320s

approach, despite being unable to confirm a runway sighting.

ANSV says the first officer subsequently identified the runway at 480ft, and the captain took control of the aircraft. But at 240ft, the first officer exclaimed that he saw "four red", a reference to the precision approach path indicator lamps, which showed that the A319 was far below the correct glidepath.

The inquiry says that the adverse weather and darkness, combined with the descent over water, created a "black hole" illusion which led the pilot to

believe the aircraft was high on the approach. This caused him to "abandon" the ideal descent profile and steepen the approach sharply. The A319 crossed over the airport's terminal VOR beacon at a height of 92ft, less than half the 200ft expected for a normal glide.

Although the aircraft sustained heavy damage during the ground impact and slide, there were no fatalities or even serious injuries among the 129 occupants. Thirty-four passengers and a crew member suffered minor injuries.

Investigators also detailed the

confusion after the accident that led to firefighters not arriving at the scene of the crash for more than 20min.

The quality of radio communications between the tower and the firefighters was "very poor" and often "incomprehensible", the ANSV says in its report. The presence of heavy rain affected the radio communications and significantly reduced visibility available to rescuers who were attempting to locate the aircraft in darkness.

Radio problems meant the firefighters made contact with the tower more than 3min after the emergency plan was initiated.

Firefighters initially mistook a Boeing MD-80, waiting for take-off clearance, for the aircraft involved. After realising their error and continuing the search, they detected debris near the threshold of runway 07 and believed the aircraft had overrun the runway and crashed into the sea.

Wind Jet, which operated a fleet of A319 and A320 jets, collapsed in 2012. ■

**FLEETS** DAVID KAMINSKI-MORROW LONDON

## Niki plans to switch from E-Jets to Airbus by June

**A**ustrian low-cost carrier Niki is to have its Embraer fleet replaced by Airbus jets as part of a continuing fleet harmonisation by parent Air Berlin.

Niki has seven Embraer 190s, each configured with 112 seats.

But Air Berlin states that the aircraft will be replaced by five Airbus A319s, with 150 seats, and a pair of 180-seat A320s.

The switch will be completed by June 2015.

Air Berlin chief Wolfgang

Prock-Schauer says the change will "create new growth opportunities" for the Austrian carrier.

"Harmonising our fleet will enable us to achieve increased productivity, lower costs per seat-kilometre and more efficient

flight operations," he adds.

Air Berlin is removing the Embraers as part of a broader simplification under which it will also withdraw its Boeing aircraft to become an all-Airbus operator in 2016. ■

the first in the world!!

**Wide field of view with flat surface**

**KomyMirror** PAT.



**Passenger Convenience**



**Shorten Aircraft Turns**



**Saving Non Productive Hour**



737BSI Stowage Bin

Komy Co., Ltd.

www.komy.com





## LAUNCH CUSTOMER

## Ryanair settles order for 100 737 Max 200s

**R**yanair has finalised an order for 100 Boeing 737 Max 200 aircraft in a deal valued at \$11 billion at list prices.

A commitment for the aircraft, which includes options for an additional 100 of the type, was announced in September. The Irish budget carrier had said it would take delivery from 2019 to 2024.

**“Ryanair looks forward to using these 737 Max 200 aircraft to grow”**

**MICHAEL O’LEARY**

Chief executive, Ryanair

The order confirms it as the launch customer for the high-density variant, to be configured with 197 economy seats.

“As many of Europe’s flag carriers cut capacity on short-haul routes, Ryanair looks forward to using these new 737 Max 200 aircraft to grow at many more of Europe’s primary airports,” says Ryanair CEO Michael O’Leary. ■

## FACILITIES

## Rio airport authorised to handle A380

**G**aleao International airport in Rio de Janeiro has become the first in the country to receive authorisation from Brazil’s civil aviation authority ANAC for the Airbus A380.

ANAC says that the airport’s runways and firefighting equipment are now capable of handling the aircraft, and the airport is fulfilling requirements to guarantee the safe operation of very large aircraft.

The authorisation also includes approval for the airport to handle the Boeing 747-8. ■

## INQUIRY DAVID KAMINSKI-MORROW LONDON

## ATR crew misread approach

Investigators say possibly disorientated pilot did not carry out proper go-around procedure

**L**aotian investigators have determined that the crew of a Lao Airlines ATR 72-600 failed to properly execute an approach and go-around at Pakse before the aircraft crashed with the loss of all on board.

The inquiry indicates that somatogravic illusion – a mistaken perception of the aircraft’s pitch – might have contributed to the 16 October 2013 accident.

Laos’s government states that the crew was preparing a VOR-DME approach to runway 15 at Pakse following a service from Vientiane, the capital.

The approach requires staying at 2,300ft until reaching the final fix, some 6nm before the runway, before continuing the descent to the minimum altitude of 990ft – where the crew must abort if they cannot sight the ground.

Thunderstorm activity was present at the airport and the ATR carried out the approach in rain. But while the prescribed minimum altitude was 990ft the crew set the threshold at 600ft.

“The choice of minima lower than the published minima considerably reduces the safety margins,” says the Lao government inquiry. Having descended to 595ft, the crew chose to abort



All 49 people aboard the ATR 72-600 died in the 2013 crash

the approach and disengage the autopilot. But while the missed-approach procedure required a right turn and a climb to 1,500ft, the aircraft merely carried out the turn; the missed-approach altitude was still set at 600ft.

Although the government has publicly published only a summary of the final report, it states that a series of ground-proximity warnings sounded and the aircraft reached a height of just 60ft with a 37° right bank.

When the pilot realised the aircraft was too low, according to the inquiry, he “over-reacted”, pulling the aircraft’s nose up to

pitch angles of 33°. It says the aircraft, which was operating mainly in cloud, achieved a maximum altitude of 1,750ft, but a nose-down input on the control column caused the pitch to “significantly” decrease.

This sharp pitch-up was followed by a nose-down command, probably in the absence of visual reference, which is characteristic of the effects of somatogravic illusion.

The aircraft descended and struck trees on an island in the Mekong river. None of the 44 passengers and five crew members survived. ■

## ORDER

## Brazil’s Azul commits to 63 A320s

**A**zul has committed to 63 Airbus A320neo aircraft as its first narrowbody types, citing comfort and lower operating costs over the competing Boeing

737 Max for its decision.

The Brazilian carrier will buy 35 aircraft directly from the European airframer and lease 20 from AerCap and another eight from

GECAS. Deliveries will begin in 2016 and continue through 2023.

“Azul will soon offer even more seats on our longer-haul flights, allowing us to reduce operating costs,” says David Neeleman, Azul chief executive. “The A320neo is also a perfect complement to our E-Jet fleet, giving us additional seats and capacity.”

The airline has a fleet of 57 Embraer 195s and 22 E190s, as well as 76 ATRs.

Azul selected CFM International LEAP-1A engines. ■



Deliveries are to begin next year and continue through 2023



Australia to start sea trials with Canberra-class carrier  
**DEFENCE P18**

**AIRCRAFT DATA** MAX KINGSLEY-JONES LONDON

# Retirements start to whittle ageing fleet of 747-400s

Half of all delivered airliners remain in passenger service a decade after production ended, but numbers are falling

A decade after Boeing built the last passenger variant of the 747-400, more than half the delivered fleet remains in service in the airline role, but the retirement rate is building momentum.

Next year marks the 10th anniversary of the final 747-400 passenger aircraft delivery, which took place in April 2005 when China Airlines received line number 1358, registered B-18215. Between 1989 and 2005, Boeing delivered a total of 528 non-freighter versions of the 747-400.

Flightglobal's Ascend Fleets da-

tabase shows that the operational passenger fleet peaked at around 490 aircraft in 2005 as those last -400s were delivered. At the time, British Airways was the largest 747-400 operator with 57 in service, and other major users included Japan Airlines (42), United Airlines (31) and Lufthansa (30). Qantas, Singapore Airlines, Korean Air, All Nippon Airways and KLM each operated at least 20 units.

The fleet has been declining by 5-10% each year as aircraft have been either moved to a cargo role or parked. Ascend Fleets shows



Rex Features

**British Airways remains the largest operator, with 43**

that the current operational fleet slipped below 300 units during 2014 and now stands at 277.

BA remains the largest operator with 43 in service, while United, KLM and Transaero all have fleets of 20-25 aircraft. The global fleet has declined by 29 during 2014, with BA and Cathay Pacific making the largest retirements (seven and six, respectively). During the last 12 months, three long-standing 747 operators retired their last

units: Air New Zealand, ANA and Philippine Airlines withdrew nine aircraft between them.

The Flightglobal Fleet Forecast long-term outlook produced by the Ascend consultancy predicts that fewer than 100 units will be in operation by around 2021/22. However, Ascend sees a "long tail" in 747-400 operations and forecasts that there will still be around 70 -400s in passenger service a decade from now. ■

Conseil Régional de Lorraine, Chambley Planet' Air site  
The Metz-Nancy-Lorraine Airport site  
**CALL FOR EXPRESSIONS OF INTEREST - AERONAUTIC SECTOR**

IMAGINE  
A FUTURE  
IN LORRAINE

**EXCEPTIONAL AERONAUTIC  
INFRASTRUCTURE AND FACILITIES**

**LAND AND BUILDINGS AVAILABLE  
FOR PRIVATE ENTERPRISE**

**AN IMPRESSIVE AERONAUTIC SECTOR  
IN LORRAINE MADE UP OF COMPANIES AND  
TECHNOLOGICAL RESEARCH INSTITUTES**

CONSULT THE FULL DOSSIER  
AT **LORRAINE.EU**



ROTORCRAFT DAN PARSONS WASHINGTON DC

# Marines wait for King Stallion to stretch its legs

The US Marine Corps will have to wait until at least March 2015 for the first flight of its Sikorsky CH-53K King Stallion heavy lift helicopter.

Originally planned for earlier this year, the milestone had been pushed back to the end of the year when a crack was found in one of the four gearboxes used with a ground test article. But the US Naval Air Systems Command (NAVAIR) now says the type will enter flight testing "sometime between March and May next year".

## CHANGES

"First flight is driven by the current ground test vehicle [GTV] test events," the navy's programme executive office for aviation says. "The GTV is currently undergoing powered ground tests to measure and verify the ability of the drive system, transmissions and engines and flight control system

The helicopter will be the US military's largest



Sikorsky

to safely fly the CH-53K helicopter across multiple flight scenarios."

Engineers at NAVAIR and Sikorsky have made adjustments to the CH-53K's main rotor gearbox to improve load distribution,

and have been retesting the fix "to ensure optimal performance prior to the flight test phase", the service says.

Sikorsky says the static ground test article has undergone nearly

200h of testing, including being subjected to 115% of its maximum airframe load. The company also has completed vibration and ultimate load testing with the main rotors at 150% of design loads.

The USMC plans to buy 200 King Stallions to replace its entire fleet of smaller CH-53E Super Stallions. The new type was originally expected to enter service in 2015, but developmental delays have caused initial operational capability to slide until at least 2018.

The King Stallion's structural integrity was officially cleared for flight in April, before a test airframe was rolled out at Sikorsky's West Palm Beach manufacturing facility in Florida on 5 May.

With a maximum take-off weight of 39,900kg (88,000lb), the CH-53K will be the US military's largest helicopter. ■

## UNMANNED SYSTEMS

### UK Royal Navy forms dedicated UAV squadron

The UK Royal Navy has established the 700 Xperimental naval air squadron to operate its Boeing/Insitu ScanEagle unmanned air vehicles.

Currently being flown from the frigate HMS Kent during counter-piracy missions in the Arabian Sea, the ScanEagle system has been operating with the RN for one year under a £30 million (\$47 million) contract. That deal is due to conclude next year, but it is believed that discussions are taking place that could lead to its extension.

Based at RNAS Culdrose in Cornwall, the unit will also perform testing and evaluation of future systems.

AgustaWestland is already under contract to demonstrate a rotary-wing UAV using an optionally piloted helicopter. ■

## PROCUREMENTS ARIE EGOZI TEL AVIV

### Budget pressure hits Israel

Nation reduces planned follow-on deal for F-35s, and fails to agree on Osprey acquisition

Israel is to acquire a second batch of 14 Lockheed Martin F-35 Lightning II stealth fighters, after the nation's cabinet approved the buy on 30 November.

One aircraft from the new order will be dedicated as a test asset and employed during the development and integration of Israeli-produced systems.

Israel's second contract was approved in principle when defence minister Moshe Ya'alon met his then-US counterpart Chuck Hagel in Washington, DC, recently. Previous reports suggested the nation had been planning to order 25 aircraft in this batch, which now instead includes options for another 17 aircraft.

The Israeli air force already is to purchase an initial batch of 19 conventional take-off and landing F-35As, for \$2.75 billion.



Lockheed Martin

Funding has now been secured for only 14 more Joint Strike Fighters

Ordered as part of the US programme's eighth lot of low-rate initial production, the first two aircraft from the lead order are due to arrive in Israel by early 2017, with the remainder to follow through 2018.

Meanwhile, a proposal to equip the air force with six Bell Boeing V-22 Osprey tiltrotor transports continues to drive heated debate. A long-awaited

meeting between prime minister Benjamin Netanyahu and finance minister Yair Lapid on 1 December ended in disagreement, and talk of elections in March 2015.

The US Department of Defense in January notified Congress of its intention to supply the Ospreys to Israel from late 2016, under a Foreign Military Sales deal worth a potential \$1.3 billion. ■

See Directory P32

# THE PARADIGM SHIFT HAS ARRIVED



www.eurofighter.com

The Eurofighter Typhoon has a new suite of upgrades offering a fundamental shift in capability further securing its place as the most powerful and reliable swing role/multi-role combat aircraft currently available. It can conduct Air to Air and Air to Ground engagements simultaneously without detriment to the operational effectiveness of either, this is unique amongst modern military aircraft.





CEREMONY ANDREW MCLAUGHLIN SYDNEY

# Australia to start sea trials with Canberra-class carrier

Navy's largest-ever vessel retains ski-jump ramp, enabling cross-decking by STOVL types

The Royal Australian Navy commissioned its first of two Canberra-class landing helicopter dock vessels at a ceremony in Sydney on 28 November.

HMAS *Canberra* and her sister ship – to be christened HMAS *Adelaide* late next year – will be the largest vessels ever operated by the service. They are based on the Spanish navy's Navantia-built strategic projection ship the *King Juan Carlos I*.

Each vessel has a displacement of 27,500t at full load, and is capable of accommodating a maximum of 18 NH Industries MRH90s, Sikorsky S-70/MH-60R Seahawks or Airbus Helicopters Tiger armed reconnaissance helicopters. Each also can carry 110 armoured vehicles, four amphibious landing craft inside a well dock with sea door, and a battalion of up to 1,200 troops.

The 230m (757ft)-long ship has a 1,390m<sup>2</sup> (15,000ft<sup>2</sup>) hangar/light vehicle deck, a larger heavy vehi-



The new ship is based on a design used by the Spanish navy

cle deck and sufficient generating capacity to be able to export electricity into the power grid of a small city affected by a natural disaster, the Australian Department of Defence says.

The flightdeck has six landing spots for medium-sized helicopters, or four for the Boeing CH-47F Chinook – seven of which will be delivered to the Australian army from next year. Aircraft elevators are located forward and aft, while there is also a forward armaments elevator.

Australia's Canberra-class ships retain the Spanish design's ski-jump ramp, largely because there was no benefit in redesigning them. The feature not only of-

fers cross-decking opportunities for short take-off and vertical landing types such as the Boeing AV-8B Harrier II and Lockheed Martin F-35B, but also flexibility for the Australian Defence Force to also operate such aircraft in the future. The possible acquisition of the F-35B is currently being studied as part of a new defence White Paper due for release in mid-2015.

The *Canberra* is due to commence first-of-class sea trials by the end of December. A first two aircraft types – an MRH90 and a Seahawk – have already landed aboard the vessel while alongside in Sydney, initially using two of its deck landing spots. ■

TENDER DOMINIC PERRY LONDON

## Polish helicopter rivals get extra time to respond

Poland has extended until 30 December its deadline for final submissions on a 70-aircraft tri-service helicopter acquisition, after requests from two of the three bidders for the roughly \$3 billion deal. It had previously set the cut-off date for responses to a request for proposals as 28 November.

"The change is dictated by efforts to ensure that participants in the proceedings have the time they need for reliable and accurate preparation of tenders," the Polish defence ministry says, adding: "this decision [will help] ensure the competitiveness of the proceedings." The ministry declines to say which of AgustaWestland, Airbus Helicopters and Sikorsky asked for the extension.

Poland expects to choose the AW149, EC725 Caracal or S-70i Black Hawk by the end of February 2015, with a series of test flights to follow. Contracts, including agreements on local assembly, technology transfer and offsets, are due to be finalised by the second half. One type is being sought to operate across all three services.

Sikorsky – which is also proposing the S-70B Seahawk to meet the naval element of the deal – in October threatened to pull out of the running, unless the defence ministry altered the terms of the requirement. ■

**The ship's flightdeck has six landing spots for medium-sized helicopters, or four CH-47F Chinooks**

## CMC's Integrated Cockpit Solutions

- Transport aircraft, trainers and helicopters
- Industry standard interfaces
- Off-the-shelf technology

**Esterline**

**CMC Electronics**

MONTREAL • OTTAWA • CHICAGO • [www.cmcelectronics.ca](http://www.cmcelectronics.ca)



# SMALL DIAMETER BOMB II



## TODAY'S FORECAST: BULLSEYE.

Whether threats stand and fight, or run and hide, Raytheon's Small Diameter Bomb II is the next-generation weapons capability for all weather conditions. Harnessing tomorrow's technologies today, SDB II™ is an integral part of the F-35 programme and can prosecute moving and fixed targets quickly, accurately and efficiently. Building upon Raytheon's proven record including Paveway™, AMRAAM® and Tomahawk, the SDB II™ may be small in size but it's huge in demonstrated results.



See how SDB II™ is changing the game at:  
[Raytheon.com/SDBII](http://Raytheon.com/SDBII)

Connect with us: [Twitter](#) [YouTube](#) [Facebook](#) [LinkedIn](#) [Google+](#) [Instagram](#)

# Raytheon

*Customer Success Is Our Mission*





TECHNOLOGY BETH STEVENSON KOUROU

# Radar surveillance picks up in Kourou

French Guiana air base inaugurates Ground Master 406 array as Paris targets military co-operation in Latin America

An air base in Cayenne, French Guiana has become the first French site to bolster its air defence and surveillance capability with the ThalesRaytheonSystems Ground Master 406 "Calypso" radar, following the unit's inauguration on 27 November.

Of the four systems on order for France, the Cayenne unit was the first to become operational, as the French overseas territory looks to strengthen its defence in the Latin American region and tackle a series of threats common to the area. Prohibited fishing and gold mining incidents are prevalent, as are illegal immigration and unlawful flying.

French air base 367, which includes the military control centre in Kourou, now hosts the GM406 radar that covers French Guiana, plus neighbouring Suriname to the west and northern Brazil to the south.

Col Jean-Paul Besse, commander of the air base, explains that French airspace policy applies in the region, and it is a priority for the overseas territory to have a quick reaction air capability should it be required.

In mainland France four quick reaction bases can deploy two fighters – either the Dassault Mirage 2000 or Rafale – within 7min

**The overseas territory can call on France to dispatch Mirage 2000 fighters if required**



© Crown Copyright

of notification. "This gives us a strategic advantage. We have the same capability here – we're in France and protecting airspace is the priority," Besse says.

The reaction time is not quite as quick in French Guiana, as it is primarily helicopters that are based in the country. However, if required, fighters can be called up from France and arrive within 8h under Operation BUBO.

"Any time we need more aircraft and need to extend the area of operations I ask for one [Boeing] E-3F and four fast jets," Besse says. This provides a four- to five-time increase in capability against threats in the territory.

The GM406 is a strategic extension of air coverage in French Guiana, offering surveillance of low- to high-level threats. The preceding radar did not offer coverage of low-flying aircraft, which was required due to a prevalence of small light aircraft operating in the area.

"We bought this in in order to optimise all segments of airspace," Besse says.

Surveillance is typically carried out by five Airbus Helicopters AS555 Fennec rotorcraft that are based in French Guiana. The fleet will work with the radar to provide a network of systems for air surveillance coverage – in particular low-level identification. Information gathered by the

GM406 will be fed to the command and control centre at Kourou, which is then sent to the national air operations centre in Lyon.

Besse adds that an unarmed unmanned air vehicle capability would be beneficial, particularly for some of the coastal surveillance tasks – specifically a medium-altitude, long-endurance (MALE) type. The French air force is in the process of acquiring its fleet of General Atomics Aeronautical Systems MQ-9 Reapers, some of which are operating on French missions against insurgents in Mali.

Although Besse did not go into detail about specific systems or deployments to Guiana, he says "any MALE UAV would be beneficial" in the region.

## AGREEMENT

Meanwhile, representatives of both the Mexican and Brazilian militaries were present at the radar inauguration – a sign both of interest in the surveillance capability and a pointer to increased co-operation in the region.

A technical agreement was signed between Brazil and French Guiana two weeks earlier under which both parties will share surveillance information.

Both face the problem of illegal fishing and gold mining, and illegal flights into the country are a

particular issue for Brazil. Gen Philippe Adam, chief of military operations in French Guiana, says an exchange between Brazil and France has been on the latter government's agenda for some time, with French President François Hollande having visited Brazil 12 months ago.

**Prohibited fishing and gold mining incidents are prevalent, as are illegal immigration and unlawful flying**

"We are in another era with this exchange," Adam adds. "We will work together to exchange the required information."

He says as illegal flights are a particular problem for Brazil, the new French radar will be able to alert the nation on non-cooperative parties that fall under the radar's spectrum.

Mexico's interest at present, meanwhile, is primarily about training and educating Mexican forces, Adam adds.

Of the other French GM400 family of radars, one will be delivered to Lyon and one to Nice – the next to be delivered once the site is completed. The fourth will be a mobile unit also initially based out of Nice. ■



**The ThalesRaytheonSystems unit also covers northern Brazil**

Beth Stevenson/Flightglobal



Cirrus flies its second conforming Vision personal jet  
**BUSINESS AVIATION P22**

**INDUSTRIAL STRATEGY** DAN THISDELL LONDON

# Selling out of Dassault

With Airbus reducing its stake, speculation begins about corporate ambition and the prospect of a French realignment

**O**f all the legacies of 1980s French industrial policy, few are more peculiar than the fact that Airbus owns a short half of the maker of Falcon business jets and Rafale fighters – Dassault Aviation. Now the three parties to that arrangement, including the French government, have begun to pick it apart.

As a blend of politics and business, the affair is, not surprisingly, opaque – so while the implications are far from clear, it is fair to imagine that French aero-industrialists have their sensors finely attuned to the matter.

What we know is that Airbus, which has long held 46.32% of Dassault Aviation, has sold 8% of the company back to Dassault for €794 million (\$979 million). Dassault, for its part, will cancel that 8%, plus another 1% of treasury shares, with a net result that Airbus will be left holding 42.11%. Airbus will attempt to sell a further 10%, market conditions permitting, by 30 June 2015, and Dassault will buy up to 5%.

## PARISIAN INFLUENCE

Meanwhile, the French government in the latest transaction – for €980 per share, realised on 28 November – agreed to waive its right of first offer. Paris is, however, maintaining a clear right to stop any transfer of shares that would see Groupe Dassault's stake fall below 40%. Paris's intentions may be opaque – or simply may be undefined – but an ongoing desire to maintain a strategic influence over key French industries can probably be assumed.

The Airbus stake, after all, is a legacy of Francois Mitterrand-era government attempts to nationalise Dassault. At the time, founder Marcel Dassault refused to sell, and a compromise was reached that saw the government and government-owned Aérospatiale, a predecessor company of Airbus,



The French air force and navy are the only operators of the Rafale

purchase minority stakes which eventually dropped onto Airbus's balance sheet.

But while this transfer of a few shares could be the beginning of a slow unwinding of Airbus's position in Dassault Aviation, there is no risk that parent company Groupe Dassault – whose other main business is Dassault Systemes, the software house behind the widely used CATIA design suite and a raft of cutting-edge virtual-reality applications – will lose control of its aviation arm. Before the latest transaction, Groupe Dassault owned 50.55% of Dassault Aviation. After the purchase and treasury shares cancellation, it will hold 50.95%.

What, then, is changing? For Airbus, the answer would seem to be “very little”. The deal looks to be excellent value for Airbus, which has periodically faced calls to rid itself of what amounts to an idle investment that paid it a profit share of less than €295 million for 2013. In August 2013, Airbus Group shareholder The Children's Investment (TCI) fund urged chief executive Tom Enders to sell off the Dassault stake, which it estimated to be worth about €4 billion. That figure would value the whole of Dassault Aviation at €8.6 billion,

but the latest deal price would translate into a whole-company value of more than €9.9 billion.

The latest deal, combined with the planned share cancellation, leaves more or less unchanged a heavy 3% of Dassault Aviation shares on the open market.

## In order to understand the market value of Dassault, investors must know “the scale of its ambitions”

**SANDY MORRIS**  
Equities analyst, Jefferies

Such limited trading volume gives at best a weak signal as to the value of a company which earned €487 million in 2013 on sales of €4.59 billion. To value the company at around €9 billion is a generous 18 times earnings, but, ultimately, question marks hang over any valuation. To properly value Dassault Aviation, consider that more than half of its orderbook is in business jets, where Falcon is a strong player but in an arguably over-supplied market. The rest is in a shrinking defence market where Dassault's only large customer is budget-strained

France. That situation could change if seemingly interminable negotiations over a deal to sell 124 Rafales to India are concluded. But that deal, the first export order for Rafales, was reached in principle in 2012 and no final resolution is in sight.

Sandy Morris, an equities analyst with Jefferies investment bank, says a conclusion to the India deal could open the door to further export sales of the Rafale, whose only operators today are the French air force and navy – and which inevitably competes for sales with the Airbus-championed Eurofighter. But, he stresses, the real significance is that India “underpins” the Rafale programme.

## IMPLICATIONS

The other big issue in attempting to value Dassault revolves around what Morris calls “the scale of its ambition”. To have Airbus as a large shareholder may not matter much if Dassault carries on as it is. But to attract investors and exploit potential opportunities – for example, to lead a future pan-European unmanned air system development project, with partners that would necessarily include Airbus – would be far easier without messy cross-shareholdings.

To that end, notes Morris, Dassault could fund about half of the cost of buying out Airbus entirely by further tidying up its affairs with the sale of its 29% stake in aerospace electronics group Thales.

Thales, of course, is periodically linked to a strategic partnership of one form or another with that other pillar of French aerospace, Safran. For now, a private sale of 8% of Dassault may not amount to much – but this Airbus-Dassault affair potentially foretells a wider restructuring of the French, if not European, aerospace industrial landscape. ■





**MRO KATE SANSFIELD LONDON**

## Flying Colours to offer widebody completion work

**C**anadian engineering and completions firm Flying Colours is planning to offer widebody VIP airliner completions and refurbishments within the next five years as part of a strategy to broaden its maintenance, repair and overhaul services offering.

"We have the skill set to accommodate widebody work," says Flying Colours vice-president Eric Gillespie, "But we don't have the infrastructure yet to support these large projects."

The 25-year-old company currently offers MRO on a broad range of aircraft from its facilities in Peterborough, Ontario and St Louis, Missouri. However, maintaining and supporting Bombardier's Learjet, Challenger and Global product lines accounts for 70% of Flying Colours' work.

"This business is really important to us, but we are also keen to diversify," Gillespie adds.

Flying Colours performs more than a dozen completions and around 30 refurbishments annually across its two North American bases. "We would like to add widebodies in about five years," says Gillespie. "The timetable will be driven by customer demand."

Initially, the firm plans to offer VIP completions on narrowbody airliners "such as the Boeing Business Jet and [Bombardier] CSeries", and is looking to build another hangar in Peterborough to house the projects.

The privately-owned company cut its teeth on small airliner completions around a decade ago with the introduction of its CRJ200-based VIP conversion, the ExecLiner. "We take a CRJ200, strip out the passenger seats and fittings, install a new interior, new paint and add an auxiliary fuel system," Gillespie says.

Flying Colours has delivered 20 ExecLiners in both VIP and passenger shuttle configuration to date and should deliver another aircraft by the end of the year. ■

**PROGRAMME KATE SANSFIELD LONDON**

# Second Vision takes flight

Milestone for Cirrus as production-conforming C1 personal jet joins certification effort

**C**irrus Aircraft has marked another milestone in the development of its Vision SF50 personal jet following the first flight late last month of its second production-conforming aircraft.

The third and final certification aircraft is being readied for first flight later in December.

The Duluth, Minnesota-based airframer flew the first SF50, C0, in March. Since then, the Williams International FJ33-powered type has notched up more

than 150 flights and 220h of aerodynamic performance and handling testing. C0 will also be used to test the SF50's emergency airframe parachute system.

"C1 will be used for an array of certification efforts, including flight into known icing and propulsion testing," Cirrus says. "C2 will be used for reliability and optional equipment testing."

The seven-seat, carbonfibre SF50 is designed to fill the gap between high-performance pis-

ton singles – such as Cirrus' SR22 – and entry-level business jets like the Cessna Citation Mustang and Embraer Phenom 100. The \$1.96 million, Garmin G3000-equipped SF50 has a range of 1,200nm (2,220km), a stall speed of 61kt and a cruise speed of 300kt (556km/h).

Cirrus says it will shortly unveil a dedicated training programme to enable its 500+ position holders to secure their Vision type rating. ■



The carbonfibre aircraft will be used for propulsion and known icing testing

**TURBOPROPS EMMA KELLY PERTH**

## King Air 350C is just what the flying doctors ordered

**T**he Queensland section of Australia's Royal Flying Doctor Service (RFDS) has ordered two heavier versions of the Beechcraft King Air 350C. The order, signed late last month with Beechcraft's Australia and New Zealand distributor Hawker Pacific, is the first for the type from an Australian operator.

The two twin-engined turboprops are due for delivery in April 2015, after which they will undergo a medical fit-out before they enter service with the RFDS.

The 350C offers an increased payload of 635kg (1,400lb) compared with the baseline 350, along with a built-in airstair and a

large cargo door, making it ideally suited to emergency medical services missions.

The RFDS will use the aircraft for aeromedical retrieval services and inter-hospital transfers across its network throughout Queensland, which includes nine regional bases. The extended range of the 350C will allow it to operate non-stop between Cairns and Brisbane, as well as regional points throughout the state.

The Queensland section currently operates a fleet of 20-plus single and twin-engined turboprops, including King Air 200's, 200Cs, Pilatus PC-12s and Cessna Grand Caravan 208s. ■

**STRATEGY KATE SANSFIELD LONDON**

## NetJets lures owners out of owning asset

**N**etJets has formally launched an aircraft sales push targeted at owners looking to move from outright ownership into a less capital-intensive offering, such as a fractional or charter.

The Aircraft Transition Programme also provides an opportunity for the world's largest business aircraft operator to increase its customer base and feed demand for its 500-plus strong fleet of aircraft.

NetJets is now two years into a multi-billion dollar overhaul of its vast inventory, and will have received 60 new Signature Series-branded aircraft by year-end. ■



Fighting on  
many fronts  
FEATURE P24

STRATEGY DAN THISDELL LONDON

# One Rolls-Royce or two?

Some investors doubt the engine maker's long-term vision and want to see it hive off its non-aerospace businesses

**R**olls-Royce will make the news later this month when Airbus delivers the first A350 to launch customer Qatar Airways – powered, as all A350s will be, by the UK engine maker's Trent XWB. But even on the eve of achieving this milestone, the company made the financial news last week with a call for its breakup.

According to London investment bank Investec Securities, R-R is an underperformer that has been following a misguided strategy to become a diversified industrial group – rather than focusing on its core business of gas turbines for civil aerospace. This accounted for 42% of 2013 group sales, and is expected to show good growth over the next couple years (see chart below).

## GROWTH PROSPECTS

Unsurprisingly, powerplants for military applications don't show such growth prospects, but sales represented 17% of group revenue in 2013 and Investec recognises “tangible benefits and synergies” from running the civil and defence aerospace businesses side-by-side. However, it says investors “continue to doubt the rationale of combining this grouping with other industrial assets”. Those assets, accounting for half of 2013 revenue, include land and marine gas turbines, nuclear

power systems (including for UK Royal Navy submarines), design of ships and other marine equipment and marine piston engines.

What Investec wants from chief executive John Rishton and the board of directors is a serious review of a strategy that has, over the past several years, seen Rolls-Royce spend some €4 billion (\$4.9 billion) to first form a marine diesels joint venture with Daimler and then take complete ownership of the former Tognum business, now known as Rolls-Royce Power Systems. Concern over this strategy was elevated in October 2014, when R-R issued a profits warning on the back of deteriorating economic conditions hitting power systems, nuclear and marine – along with the continuing slump in defence spending.

Ideally, says Investec, that review would lead to a breakup of the company – either a straight split into two companies, along the lines of the existing Aerospace and Land & Sea divisions, or a sell-off of non-aerospace assets, which could return some £6bn to shareholders. Realistically, the bank expects the board to maintain the “status quo”, a strategy that would leave R-R looking like United Technologies (UTC), GE or Honeywell, rather than a pure-play aerospace firm. But even with no change, the discipline of a review would, it reckons, help the board to better communicate its ambitions and regain collapsing shareholder confidence (see share price chart).

One explanation for Investec's proposal is that, like many investors, it does not like conglomerates. Managements typically justify diversification strategies as means to protect their firms from downturns by building a counter-cyclical portfolio. Investors, however, generally feel that portfolio-building is their job – and managements should focus on

## ROLLS-ROYCE: FIVE-YEAR SHARE PRICE MOVEMENTS



their strengths and give investors clean options unless there are clear synergies. At Rolls-Royce, this means “don't make me buy marine pistons and nuclear submarines when I want to put my money into aerospace gas turbines”.

## WIDEBODIES MATTER

Not all investors agree that R-R aerospace suffers, however tenuous its links to the rest of the group. But Investec's analysis draws useful attention to the challenges facing the aero engines unit. As Investec's Rami Myerson sees it, in the short term R-R has got to match, with its Trent XWB, Airbus's A350 production ramp up. And, he adds, the Trent 1000 option for Boeing's 787 remains a priority while the company has committed to a Trent 7000 to power Airbus's re-engined A330neo, set to enter service in 2017.

In the longer term, R-R needs a plan to return to the narrowbody airliner market, which it exited when it sold its stake in the International Aero Engines (IAE) consortium to Pratt & Whitney in 2013. Myerson observes, however, that such an engine could be a very expensive project, potentially costing more than the old \$1 billion per engine rule of thumb.

Business jets are also a segment

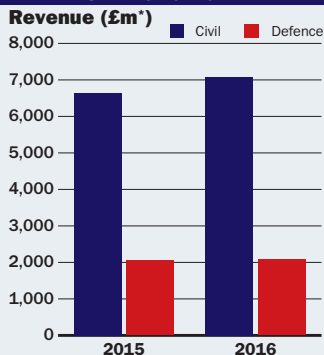
where R-R has been losing ground recently and may need to invest to regain market share.

There is another consideration to splitting the company into Aerospace and Land & Sea companies. With a separate arrangement for the nuclear submarine business, the UK government's golden share would become irrelevant, raising the prospect of foreign takeover. London has tended to be sanguine about “losing” industrial crown jewels in the past, so such an outcome isn't unthinkable.

For its part, R-R describes itself not as a diversified industrial but as a “strong high-tech engineering company specialising in engine technologies and related high-tech areas”. And, it says, synergies are strong across the group – for example in materials technologies that have wide applicability across both divisions.

Richard Evans, formerly with Rolls-Royce and now a consultant with Flightglobal's consultancy arm Ascend, sees in R-R an essentially strong company that is technologically more or less on a par with its rivals. R-R, he notes, is stronger today than it was a year ago because it has the A330neo-Trent 7000 job on its plate – but it is weaker than five years ago, when its involvement in IAE and its V2500 narrowbody engine gave it a wider portfolio. ■

## ROLLS-ROYCE AEROSPACE REVENUE: 2015-16





Allied intervention in Syria has seen the USAF perform its first offensive acts with the F-22

**CRAIG HOYLE** LONDON

DATA COMPILED BY **SANDRA LEWIS-RICE, JOHN MALONEY & MARC-ANTONY PAYNE**  
FLIGHTGLOBAL ASCEND FLEETS & MILICAS  
LONDON

DATA ANALYSIS BY **ANTOINE FAFARD**  
FLIGHTGLOBAL INSIGHT LONDON

After a more than decade-long involvement in Afghanistan, the air wings of multiple nations had expected some respite from years of combat activity by late 2014, as the NATO-led mission completes its transition of control to the authorities in Kabul.

World events do not tend to follow such established military plans, however, and the end of the conflict with the Taliban has instead overlapped with a resurgence of violence and renewed coalition involvement in the Middle East.

Led by the USA, a large number of nations are now involved in a campaign intended to degrade the fighting capacity and also target the leadership of the Islamic State militant movement. Launched by Washington in late September, the ongoing action in Iraq has been expanded to include air strikes by combat aircraft from Australia, Belgium, Canada, Denmark, France, the Netherlands and the UK, while Iranian McDonnell Douglas F-4 Phantoms are reported to have been separately involved.

In Syria, the USA has been supported by its Gulf allies in conducting strikes on Islamic State targets, with aircraft from Bahrain, Jordan, Saudi Arabia and the United Arab Emirates having been involved to date.

This widespread coalition – which also involves other nations not participating in direct combat – is a continuation of the alliance formed by many involved in the Afghanistan mission, plus others that had supported the NATO-directed campaign to protect Libyan civilians in 2011.

In hardware terms, the allied intervention has provided an opportunity for the US Air Force to perform its first offensive acts using the Lockheed Martin F-22, with Raptors involved as the activity intensified against threats inside Syria. Having already been involved in performing air drops of humanitarian supplies in northern Iraq, the Royal Australian Air Force sent a detachment of Boeing F/A-18F Super Hornets to conduct strikes from Al Minhad air base in the UAE. Support is provided by lone examples of the service's Airbus A330/KC-30A tanker and Boeing 737-based E-7A Wedgetail airborne early warning and control aircraft, with both making their operational debuts.

Australia's involvement capitalises on its recent training experience during a Pitch Black-series exercise, in which it hosted mul-

# FIGHTING ON MANY FRONTS

New unrest in the Middle East has meant little respite for air arms expecting a break from combat duties post-Afghanistan. We evaluate the global fleet impact

US Department of Defense

tiple aircraft from Singapore, Thailand, the UAE and the USA. It also illustrates a commitment to deploy its forces over a strategic range – a capability that looks set to be strengthened through its planned addition of between two and four more Boeing C-17 transports to its existing six-aircraft fleet.

For the UK, the battle with the Islamic State movement has provided a new operating arena for some of the Royal Air Force's remotely-piloted General Atomics Aeronautical Systems MQ-9 Reapers, and also prompted a rethink on the planned run-down of its versatile Panavia Tornado GR4 strike and reconnaissance fleet.

Beyond the situation inside Iraq and Syria, 2014 saw another bloody conflict erupt in the same region, with Israel engaging Hamas militants inside Gaza from the air, and also later with ground forces. Starting in early July, the Protective Edge operation was mounted in response to rockets being fired into Israel and resulted in hundreds of missions being flown. Heightened border tensions also saw Israel shoot down a Syrian unmanned air vehicle and one of its Sukhoi Su-24 strike aircraft, which it says had entered its airspace.

The high financial cost of Israel's latest engagement in Gaza has put pressure on its na-

### More coalition aircraft have been positioned at Siauliai air base in Lithuania to sustain the Baltic Air Policing mission

GLOBAL MILITARY FLEET			
	Country	Active fleet	Share
1	USA	13,902	27%
2	Russia	3,429	7%
3	China	2,860	6%
4	India	1,905	4%
5	Japan	1,612	3%
6	South Korea	1,412	3%
7	France	1,264	2%
8	Egypt	1,107	2%
9	Turkey	1,020	2%
10	North Korea	940	2%
	Other	22,234	43%
	<b>TOTAL</b>	<b>51,685</b>	<b>100%</b>

tional budget, and drawn internal opposition to major planned aircraft acquisitions. A proposed follow-on deal that was to increase its future fleet of Lockheed Martin F-35As from 19 to 44 aircraft has been reduced by 11 aircraft, while its air force's aspiration to introduce six Bell Boeing V-22 Osprey tiltrotors has been blocked entirely so far.

In Europe, fears of a new Cold War situation took hold, after first rhetoric and then sanctions followed Moscow's support for pro-Russian militants in Ukraine and then over its annexation of the nation's Crimea region. The conflict has taken a heavy toll on Ukrainian forces, with multiple aircraft having been shot down or destroyed on the ground. Our records show that its military inventory has been slashed from 400 active aircraft to just 222 within the 12 month directory period.

The unrest in Ukraine also gained global exposure in July, when Malaysia Airlines flight MH17 was brought down over the east of the country. Investigations continue, but the use of a surface-to-air missile operated by pro-Russian separatists is suspected to have caused the Boeing 777-200ER to disintegrate while flying at 33,000ft, killing 298 people.

Russia's muscle-flexing also has involved an increased frequency of long-range flights with assets including Tupolev Tu-95 and Tu-160 bombers, which continue to test the response of NATO allies. Increased numbers of coalition aircraft have been positioned at Siauliai air base in Lithuania to sustain the long-running Baltic Air Policing mission, with others located at Amari air base in Estonia. An increased presence has also been made in Poland and Romania.

Listing the military equipment inventories of 160 nations, this year's World Air Forces directory includes information on almost 52,000 aircraft recorded as being in active service. This represents a reduction of 459 aircraft – or roughly 0.9% – from the total reported in our 2014 directory. The bulk of the change can be attributed to improved data on Russian-produced aircraft, and the attrition encountered in Ukraine.

Ongoing fleet renewals also led to some notable retirements, including that of the French air force's final Dassault Mirage F1s. The act leaves just 32 combat examples and four trainers as operational in Gabon, Iran, Libya and Morocco. Oman also during 2014 ceased operations with the Sepecat Jaguar, leaving »



Kabul's fledgling armed forces have assumed responsibility for national security, as a coalition of NATO nations has left Afghanistan



# WORLDWIDE ACTIVE FLEET PER REGION

## NORTH AMERICA

Combat aircraft	2,861
Special mission	775
Tanker	597
Transport	1,139
Combat helicopter	6,001
Training aircraft/helicopters	2,949

## NORTH AMERICA

**-2%**

Year-on-year fleet change

## EUROPE

Combat aircraft	2,145
Special mission	244
Tanker	50
Transport	687
Combat helicopter	3,411
Training aircraft/helicopters	2,049

## EUROPE

**-4%**

Year-on-year fleet change

## LATIN AMERICA

Combat aircraft	580
Special mission	145
Tanker	9
Transport	479
Combat helicopter	1,212
Training aircraft/helicopters	769

## LATIN AMERICA

**-5%**

Year-on-year fleet change

NOTE: CIS countries include Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan and Uzbekistan  
SOURCE: Ascend Fleets and MILICAS from Flightglobal

### RUSSIA & CIS

Combat aircraft	1,854
Special mission	121
Tanker	19
Transport	438
Combat helicopter	1,439
Training aircraft/helicopters	419

### RUSSIA & CIS

6%

Year-on-year fleet change

### MIDDLE EAST

Combat aircraft	1,248
Special mission	79
Tanker	41
Transport	273
Combat helicopter	1,302
Training aircraft/helicopters	950

### MIDDLE EAST

1%

Year-on-year fleet change

### AFRICA

Combat aircraft	970
Special mission	57
Tanker	7
Transport	410
Combat helicopter	1,353
Training aircraft/helicopters	949

### ASIA-PACIFIC

1%

Year-on-year fleet change

### ASIA-PACIFIC

Combat aircraft	4,926
Special mission	445
Tanker	36
Transport	945
Combat helicopter	4,771
Training aircraft/helicopters	2,531

### AFRICA

-1%

Year-on-year fleet change



» India as the lone user. The Greek air force and UK Royal Air Force respectively bid farewell to the last Vought A-7 Corsair fighters and Lockheed TriStar tanker/ transports in military service.

As well as detailing in-service fleets, our directory also includes information on a further 5,200-plus aircraft on firm order and another roughly 7,500 that are the subject of pending deals or letters of intent.

The directory shows that the US armed services account for 27% of the global active fleet, with some 13,900 aircraft in use. They also top each of our six listed equipment categories, with an overall 19% stake in the global combat aircraft category rising to 30% for combat helicopters and 78% of the operational tanker fleet.

But despite its numerical dominance – the USA has four times as many aircraft as second-ranked Russia, and more than the second- to eighth-ranked nations combined – ageing aircraft issues have led to some of its air force's Lockheed F-16D trainers being temporarily grounded pending structural repairs. The threat of further budget cuts via sequestration will also force difficult fleet decisions. The USAF still plans to retire its Fairchild Republic A-10 ground-attack aircraft, while the US Army is advancing plans to halt operations with its single-engined helicopter fleet and instead start using its Boeing AH-64D/E Apaches in the armed scout role.

Despite lingering flight envelope restrictions imposed following an engine fire which badly damaged an A-model aircraft on the ground earlier in the year, the F-35 programme received a subsequent boost, with the confirmation of a \$4.7 billion, eighth low-rate initial production deal to produce 43 of the aircraft; with a related engine package yet to be finalised. The USA succeeded in getting orders from three of its partner nations – Italy, Norway and the UK – as part of the contract, plus from export customers Israel and Japan.



Russia's activities with its Tu-95 bombers have tested the response of NATO allies

## The US Army is planning to halt operations with its single-engined helicopters and use Apaches in the scout role

The US Marine Corps was unable to make a planned debut transatlantic deployment with the F-35B to attend a pair of air shows in the UK in July, but did successfully embark the type on the amphibious assault ship the USS *Wasp* for a second series of trials, as it advances towards planned initial operational capability in late 2015.

The US Navy, meanwhile, made a historic first carrier deployment to the USS *Nimitz* with a pair of F-35Cs.

Overall, the North American region saw a 2% decline in active fleet size over the year.

In Latin America, this was magnified to a reverse of 5%, or almost 180 aircraft. In a boost, Embraer received a launch production order from the Brazilian air force for 28 KC-390 transport and tanker aircraft, the first prototype example of which was rolled out in late October. The same nation also has confirmed plans to buy an initial 36 Saab Gripen E/Fs. Under the service's plans, its total future order could be for 108 of the Swedish-designed aircraft.

The total active fleet in Europe has declined by 5%, or 400 aircraft in our listing, largely due to the removal of obsolete fighter types and revised data. Saab's Brazilian success followed disappointment in Switzerland, where a tight public referendum during May saw 52% of respondents vote against the procurement of 22 Gripen Es.

The UK provided a glimpse of its future maritime revival, by naming the first of two »

## WORLDWIDE TOP 10 ACTIVE AIRCRAFT TYPES

COMBAT AIRCRAFT			
Type	Active fleet	Share	
1 F-16	2,242	15%	
2 F-18	1,046	7%	
3 Su-27/30/33/35	874	6%	
4 F-15	854	6%	
5 MiG-29	793	5%	
6 MiG-21	668	5%	
7 Su-25	506	3%	
8 F-5	468	3%	
9 F-7	460	3%	
10 J-7	418	3%	
Other	6,255	43%	
<b>TOTAL</b>	<b>14,584</b>	<b>100%</b>	

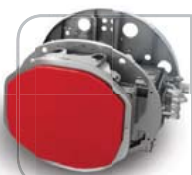
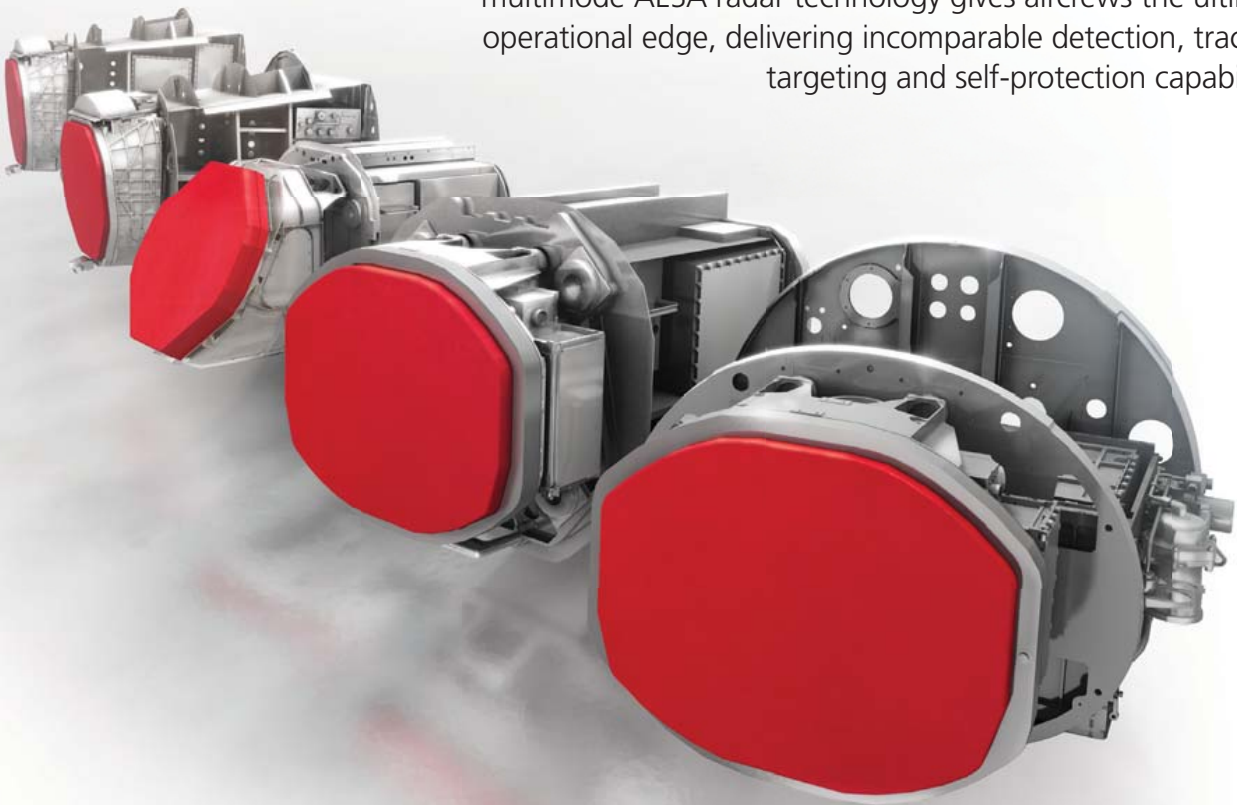
TRANSPORT			
Type	Active fleet	Share	
1 C-130/L-100	951	22%	
2 King Air	295	7%	
3 C-17	263	6%	
4 C295/CN235	253	6%	
5 An-24/26	238	5%	
6 Il-76	176	4%	
7 An-30/32	139	3%	
8 Cessna 208	125	3%	
9 C160	120	3%	
10 C212	94	2%	
Other	1,717	39%	
<b>TOTAL</b>	<b>4,371</b>	<b>100%</b>	

COMBAT HELICOPTERS			
Type	Active fleet	Share	
1 S-70/SH/UH-60	3,600	18%	
2 Mi-8/17/171/172	2,441	13%	
3 UH-1	1,452	7%	
4 AH-64	1,083	6%	
5 Mi-24/25/35	897	5%	
6 CH-47	876	4%	
7 OH-58	712	4%	
8 Bell 212/412	687	4%	
9 MD500	675	3%	
10 AH-1	550	3%	
Other	6,516	33%	
<b>TOTAL</b>	<b>19,489</b>	<b>100%</b>	

# RAYTHEON AESA RADAR TECHNOLOGY

## THE COMBAT-PROVEN ADVANTAGE.

Adaptable to any tactical platform, Raytheon's combat-proven, multimode AESA radar technology gives aircrews the ultimate operational edge, delivering incomparable detection, tracking, targeting and self-protection capabilities.



Launch an interactive overview of the full AESA family of radars at:  
[Raytheon.com/AESA](http://Raytheon.com/AESA)

Connect with us:      

# Raytheon

*Customer Success Is Our Mission*



## FLEET SIZE FOR LEADING COUNTRIES BY ROLE

COMBAT AIRCRAFT			
	Country	Active fleet	Share
1	USA	2,797	19%
2	China	1,454	10%
3	Russia	1,439	10%
4	India	762	5%
5	North Korea	572	4%
6	Egypt	413	3%
7	South Korea	399	3%
8	Pakistan	387	3%
9	Japan	288	2%
10	Taiwan	288	2%
	Other	5,785	40%
	<b>TOTAL</b>	<b>14,584</b>	<b>100%</b>

SPECIAL MISSION			
	Country	Active fleet	Share
1	USA	757	41%
2	Japan	132	7%
3	Russia	121	6%
4	China	65	3%
5	India	59	3%
6	Brazil	48	3%
7	Indonesia	42	2%
8	France	41	2%
9	Spain	37	2%
10	Israel	34	2%
	Other	530	28%
	<b>TOTAL</b>	<b>1,866</b>	<b>100%</b>

TANKER			
	Country	Active fleet	Share
1	USA	591	78%
2	Russia	19	3%
3	Saudi Arabia	17	2%
4	France	14	2%
5	Israel	12	2%
6	Singapore	9	1%
7	UK	8	1%
8	Spain	7	1%
9	Turkey	7	1%
10	India	7	1%
	Other	68	9%
	<b>TOTAL</b>	<b>759</b>	<b>100%</b>

TRANSPORT			
	Country	Active fleet	Share
1	USA	1,094	25%
2	Russia	403	9%
3	India	230	5%
4	China	182	4%
5	Brazil	137	3%
6	France	134	3%
7	Japan	98	2%
8	Iran	88	2%
9	Turkey	80	2%
10	Thailand	70	2%
	Other	1,855	42%
	<b>TOTAL</b>	<b>4,371</b>	<b>100%</b>

COMBAT HELICOPTERS			
	Country	Active fleet	Share
1	USA	5,854	30%
2	Russia	1,101	6%
3	China	806	4%
4	South Korea	668	3%
5	Japan	657	3%
6	India	584	3%
7	France	529	3%
8	Turkey	421	2%
9	UK	353	2%
10	Italy	348	2%
	Other	8,168	42%
	<b>TOTAL</b>	<b>19,489</b>	<b>100%</b>

TRAINING AIRCRAFT/HELICOPTERS			
	Country	Active fleet	Share
1	USA	2,809	26%
2	Japan	432	4%
3	Egypt	388	4%
4	China	352	3%
5	Russia	346	3%
6	UK	343	3%
7	South Korea	277	3%
8	Turkey	276	3%
9	India	263	2%
10	France	263	2%
	Other	4,867	46%
	<b>TOTAL</b>	<b>10,616</b>	<b>100%</b>

» future Royal Navy aircraft carriers the HMS *Queen Elizabeth*, and committing itself to buying the first 14 F-35Bs which will operate from its deck and land bases.

Russia and the Commonwealth of Independent States moved the other way, with a 6% increase, to almost 4,300 aircraft. The annual increase is largely the result of updated rotorcraft data within Flightglobal's Ascend Fleets and MiliCAS databases.

African militaries have encountered an overall 1% reduction in fleet size, but South Africa's Paramount Group has raised hopes of future sales by showcasing its low-cost AHRLAC design.

In the Middle East, an intense contest between the Dassault Rafale and Eurofighter Typhoon led to a victory for neither, as the UAE instead opted to request an additional batch of F-16Es from Washington, in an enhanced Block 61 configuration. Other anticipated fighter deals in Bahrain and Qatar have so far yet to advance to a selection stage, but the overall trend – up 1% this time – is of continued growth in the region.

The Asia Pacific region saw an annual 1% climb, to more than a combined 13,600 combat, special mission, tanker, transport aircraft, combat helicopters and trainers; barely 250 behind the USA. One of the highlights of 2014

was the debut appearance at November's Airshow China event in Zhuhai of the Shenyang J-31: a claimed stealth fighter which bears a strong visual resemblance to the F-35.

Additional data from Ascend not listed in this directory includes information on more than 650 fixed-wing aircraft and helicopters which are recorded as being used for VIP transport tasks, plus others which are flown by air force affiliates as civilian transports.

Other aircraft, including some employed as airborne calibration, research and development and target towing assets are also excluded, as are those airframes involved in modernisation programmes or placed in storage. ■

### EXPLANATORY NOTES

Flight International's annual World Air Forces directory uses fleet data compiled for Flightglobal's Ascend Fleets and MiliCAS databases by Sandra Lewis-Rice, John Maloney and Marc-Antony Payne, and abridged by defence editor Craig Hoyle. Published as premium products, our databases provide subscribers with detailed fleet and orders information, in the majority of cases down to serial-number level. Fleet analysis is provided by Antoine Fafard, from Flightglobal Insight. This produces a wide range of free sponsored reports, covering military, air transport and business aviation

topics, through to more specialist studies on the maintenance or aircraft finance sectors. To find out more, and to download other special reports, visit [flightglobal.com/insight](http://flightglobal.com/insight)

Fleet information is divided into these categories: **Active:** Aircraft in day-to-day use. For some Soviet-era types where only summary information is available, this also includes some non-operational platforms.

**Ordered:** Aircraft on firm order. Others which are pending purchase approval or contract signature are marked with

an asterisk. This category includes current planned order totals, which may be subject to future revision.

#### Abbreviations

**AEW** airborne early warning; **Comms** communications; **ELINT** electronic intelligence; **EW** electronic warfare; **MPA** maritime patrol aircraft; **Recce** reconnaissance; **SAR** search and rescue; **SIGINT** signals intelligence

To download your free copy of the directory from 15 December, visit [flightglobal.com/waf](http://flightglobal.com/waf)

# ROSOBORONEXPORT

## FORGING REAL DEFENCE

### NEW IL-76MD-90A



### LATEST TECHNOLOGIES, GREAT CAPABILITIES

The IL-76MD-90A is assigned for transportation and landing of a wide range of military cargo, including materiel and troops. The aircraft can operate from both concrete and unpaved aerodromes with elevations from 300m below and 4500m above sea level, and perform flights round-the-clock over the land and water space. When additional quick-detachable equipment is installed the aircraft can be utilized to transport and deploy air dropped troops (up to 225 persons), or for medevac (up to 114 wounded), or for fire extinguishing.

Rosoboronexport is the sole state company in Russia authorized to export the full range of defense and dual-use products, technologies and services. Rosoboronexport accounts for over 80% of Russia's annual arms sales and maintains military-technical cooperation with over 70 countries worldwide.



**ROSOBORONEXPORT**

27 Stromynka str., 107076, Moscow, Russian Federation  
Phone: +7 (495) 534 61 83; Fax: +7 (495) 534 61 53  
[www.rusarm.ru](http://www.rusarm.ru)

ADVERTISEMENT



AFGHANISTAN			
AFGHAN AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
EMB-314 (A-29)	2	18	
Transport			
727		3	
C-130H	3		
Cessna 208	26		
Combat helicopter			
Mi-8/17	43		
Mi-35	7		
SA315	2	1	
UH-1H	10		
Training aircraft/helicopters			
MD500	6	12+36*	
AFGHAN SPECIAL MISSION WING			
Type	Active	Ordered	
Transport			
PC-12NG	10	8	
Combat helicopter			
Mi-17	55		
ALBANIA			
ALBANIAN AIR FORCE			
Type	Active	Ordered	
Combat helicopter			
AS532	3	2	
AW109	1		
Bell 205	3		
Bell 206	5		
B0105	8		
EC145	1		
ALGERIA			
ALGERIAN AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
MiG-25	13		
MiG-29	32		
Su-24	23		
Su-30	44		
Special mission			
Beech 1900 (Recce)	6		
King Air 200/350 (MPA)	3		
Tanker			
IL-78	5		
Transport			
Beech 1900	6		
C-130H	15		
C295	5		
IL-76	10		
King Air 90/200/350	20		
PC-6	2		
Combat helicopter			
AS355	19		
AW139	11	1	

Bell 412	3		
Ka-32	3		
Mi-2	21		
Mi-8/17/171	100		
Mi-24	35		
Mi-26		6	
Mi-28		42	
W-3		15*	
Training aircraft/helicopters			
AW119	8		
L-39	30		
W-3	8		
Yak-130	16		
ALGERIAN NAVY			
Type	Active	Ordered	
Combat helicopter			
AW101	6		
Super Lynx 130/140	4	6	
ANGOLA			
ANGOLAN PEOPLE'S AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
EMB-314	6		
MiG-21	24		
MiG-23	22		
Su-22	14		
Su-25	15		
Su-27/30	1	12	
Special mission			
C212 (MPA)	4		
Transport			
An-12	10		
An-26	1		
An-30/32	7		
An-72/74	5		
C212	2		
Dornier 28	1		
IL-76	8		
Combat helicopter			
Bell 212	9		
Mi-8/17	50		
Mi-25/35	15		
SA316	19		
SA342	8		
Training aircraft/helicopters			
EMB-312	13		
L-29	6		
L-39	3		
PC-7	22		
PC-9	4		
ARGENTINA			
ARGENTINIAN AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
A-4	22		

IA-58	31		
IA-63		22	
Mirage IIIEA	6		
Mirage 5	4		
Nesher	4		
Special mission			
Learjet 35 (EW)	1		
Learjet 35 (Survey)	3		
Tanker			
KC-130H	1		
Transport			
C-130H/L-100	4		
F27	4		
F28	3		
KC-390		6*	
Combat helicopter			
Bell 212/412	10		
Ka-226		3*	
MD500	12		
Mi-171	2	5*	
SA315	2		
UH-1H	1		
Training aircraft/helicopters			
AT/IA-63	18	18	
EMB-312	26		
G120TP	4 (stored)	5	
Mirage IIIDA	2		
OA-4AR	3		
ARGENTINIAN ARMY			
Type	Active	Ordered	
Transport			
C212	1		
DHC-6	2		
Merlin III/IV	4		
Combat helicopter			
AS332	3		
AW109	3		
SA315	2		
UH-1H	47		
Training aircraft/helicopters			
Bell 206	5		
ARGENTINIAN NAVY			
Type	Active	Ordered	
Combat aircraft			
Super Etendard	11		
Special mission			
King Air 200 (MPA)	6		
P-3 (MPA)	4		
S-2 (MPA)	2		
Transport			
F28	2		
King Air 200	1		
PC-6	1		
Combat helicopter			
AS355	3		



Lockheed Martin

The Royal Australian Air Force's first F-35A pilots will start training on the Lightning II at Luke AFB, Arizona, in early 2015

S-61/SH-3H	5	
Training aircraft/helicopters		
T-34	10	
<b>ARMENIA</b>		
<b>ARMENIAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
Su-25	11	
Transport		
Il-76	3	
Combat helicopter		
Mi-8/17	20	
Mi-25/35	15	
Training aircraft/helicopters		
L-39	6	
Mi-2	6	
<b>NAGORNO-KARABAKH DEFENCE ARMY AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
Su-25	2	
Combat helicopter		
Mi-8	5	
Mi-24	4	
<b>AUSTRALIA</b>		
<b>ROYAL AUSTRALIAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
F/A-18A	55	
F/A-18F	24	12*
F-35A		2+98*
Special mission		
737 (E-7A) (AEW)	6	
737 (P-8A) (MPA)		12*
AP-3C (MPA)	15	
EA-18G (EW)		12
Tanker		
A330 (KC-30A)	5	
Transport		
C-17	6	2-4*
C-27J		10
C-130J	12	
King Air 200/350	9	
Training aircraft/helicopters		
F/A-18B	16	
Hawk 127	33	
King Air 350	8	
PC-9/A	63	
<b>AUSTRALIAN ARMY AVIATION</b>		
Type	Active	Ordered
Combat helicopter		
Bell 206	19	
Bell 412	1	
CH-47D/F	6	7
NH90	27	20
S-70/UH-60A	34	
Tiger	22	
Training aircraft/helicopters		
Bell 206	12	
<b>ROYAL AUSTRALIAN NAVY</b>		
Type	Active	Ordered
Combat helicopter		
S-70/MH-60R	20	20
Training aircraft/helicopters		
AS350	12	
Bell 429	3	
<b>AUSTRIA</b>		
<b>AUSTRIAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
Eurofighter	15	
Transport		
C-130K	3	
PC-6	8	
Combat helicopter		
Bell 212	23	
OH-58	10	
S-70/UH-60M	9	3*
SA316	24	
Training aircraft/helicopters		
PC-7	13	

Saab 105	20	
<b>AZERBAIJAN</b>		
<b>AZERBAIJAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
MiG-21	5	
MiG-29	13	
Su-25	11	
Transport		
Il-76	1	
Combat helicopter		
Ka-32	4	
Mi-17	50	15
Mi-25/35	18	
Training aircraft/helicopters		
L-39	12	
Mi-2	7	
<b>BAHAMAS</b>		
<b>ROYAL BAHAMAS DEFENCE FORCE</b>		
Type	Active	Ordered
Special mission		
King Air 350 (MPA)	1	
Transport		
Cessna 208	1	
<b>BAHRAIN</b>		
<b>ROYAL BAHRAINI AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
F-5E	8	
F-16C	17	
Combat helicopter		
AH-1E/F	22	
Bell 212	18	
S-70/UH-60M	8	
Training aircraft/helicopters		
AH-1P	8	
BO105	4	
F-5F	4	
F-16D	4	
Hawk 129	6	
T67M260 Firefly	3	
<b>ROYAL BAHRAINI NAVY</b>		
Type	Active	Ordered
Combat helicopter		
BO105	2	
<b>BANGLADESH</b>		
<b>BANGLADESH AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
F-7	37	
MiG-29	8	
Transport		
An-32	3	
C-130B/E	4	4*
Combat helicopter		
AW139	2	
Bell 212	14	
Mi-17/171	27	
Training aircraft/helicopters		
Bell 206	6	
FT-6	9	
FT-7	12	
K-8	4	5
L-39	7	
Yak-130		16+8*
<b>BANGLADESH ARMY</b>		
Type	Active	Ordered
Transport		
Cessna 208	1	
Combat helicopter		
AS365	2	
<b>BANGLADESH NAVY</b>		
Type	Active	Ordered
Special mission		
Dornier 228NG	2	
Combat helicopter		
AW109	2	
Mi-171		5
Z-9		2+1*
<b>BELARUS</b>		

<b>BELARUS AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
MiG-29	37	
Su-25	68	
Transport		
An-26	4	
Il-76	2	
Combat helicopter		
Mi-8/17	25	
Mi-26	5	
Mi-35	20	
Training aircraft/helicopters		
L-39	10	
Mi-2	6	
Yak-130		4
<b>BELGIUM</b>		
<b>BELGIAN AIR COMPONENT</b>		
Type	Active	Ordered
Combat aircraft		
F-16A	49	
Transport		
A321	1	
A400M		7
C-130H	11	
ERJ-135/145	4	
Combat helicopter		
AW109	23	
NH90	7	1+2*
SA316	3	
Sea King 48	3	
Training aircraft/helicopters		
Alpha Jet	29	
F-16B	10	
SF-260	32	
<b>BELIZE</b>		
<b>BELIZE DEFENCE FORCE</b>		
Type	Active	Ordered
Transport		
BN-2	1	
Training aircraft/helicopters		
T67M260 Firefly	1	
<b>BENIN</b>		
<b>BENIN AIR FORCE</b>		
Type	Active	Ordered
Transport		
DHC-6	1	
HS 748	1	
<b>BHUTAN</b>		
<b>ROYAL BHUTAN ARMY</b>		
Type	Active	Ordered
Combat helicopter		
Mi-8	2	
<b>BOLIVIA</b>		
<b>BOLIVIAN AIR FORCE</b>		
Type	Active	Ordered
Special mission		
Learjet 25 (Survey)	2	
Transport		
C-130B	3	
Jetstream 31	2	
King Air 90/200/350	5	
MA60		2
Combat helicopter		
AS332	1	5
AS350	2	
EC145	3	
SA316	1	
UH-1H	14	
Training aircraft/helicopters		
DA40	9	
Foxtrot 4	1	1
K-8	6	
PC-7	3	
R44	6	
T-33	14	
Tango XR	1	
<b>BOLIVIAN ARMY</b>		
Type	Active	Ordered
Transport		





Our people care



#TrentXWB  
The story continues...





Rolls-Royce

# “ The next chapter of aviation.

This is a Trent XWB, the world's most efficient aero engine, and the latest Trent to grace the skies and join the world's favourite family of large engines.

While the efficiency numbers speak for themselves, it's the people behind the numbers who really count. After all, the Trent XWB has had more of the world's best engineers working on it at this stage of its development than any previous Trent engine.

This was the moment when the first production Trent XWB left Rolls-Royce. It moved people; thousands of Rolls-Royce people, responsible for the first production engine for launch customer Qatar Airways' Airbus A350 XWB. With its imminent Entry Into Service, we start the next chapter of the Trent XWB story.

Simon Burr, Director - Trent XWB Programme

”







F27	1	
King Air 90	1	
Combat helicopter		
Z-9	6	
Training aircraft/helicopters		
R44	1	
<b>BOSNIA-HERZEGOVINA</b>		
<b>AIR FORCE BRIGADE OF BOSNIA-HERZEGOVINA</b>		
Type	Active	Ordered
Combat helicopter		
Mi-8/17	6	
SA341/342	9	
UH-1H	5	
<b>BOTSWANA</b>		
<b>BOTSWANA DEFENCE FORCE</b>		
Type	Active	Ordered
Transport		
C-130B	3	
C212	2	
CN235	2	
King Air 200	1	
Combat helicopter		
AS350	10	
Bell 412	6	
Training aircraft/helicopters		
PC-7 Mk II	5	
<b>BRAZIL</b>		
<b>BRAZILIAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
AMX-A/T	47	
EMB-314 (A-29)	31	
F-5EM	43	
Gripen E	28+72*	
Special mission		
C-130E (SAR)	1	
C295 (SAR)	2	3
EMB-110 (Calibration)	6	
EMB-110 (EW)	4	
EMB-110 (MPA)	12	
ERJ-145 (AEW)	5	
ERJ-145 (Recce)	3	
Hawker 800 (Calibration)	4	
Learjet 35 (Recce)	6	
Legacy 500 (Calibration)		6
P-3AM (MPA)	8	
Tanker		
KC-130H/M	2	
KC-767		3
Transport		
C-130E/H/M	14	
C295	10	9*
Cessna 208	32	
EMB-110	51	
EMB-120	20	
ERJ-145	6	
KC-390		28
Learjet 35	1	
Combat helicopter		
AS332	7	
AS350	29	
AS355	4	
Bell 205	2	
Bell 206	1	
EC725	4	12
Mi-35	12	
S-70/UH-60L/M	16	3*
UH-1H	23	
Training aircraft/helicopters		
AMX-T	8	
EMB-312	105	
EMB-314	61	
F-5FM	3	
Gripen F		8
P-3AM	1	
<b>BRAZILIAN ARMY</b>		
Type	Active	Ordered
Combat helicopter		
AS532	9	
AS550	33	

AS565	33	
EC725	4	12
S-70	3	
<b>BRAZILIAN NAVY</b>		
Type	Active	Ordered
Combat aircraft		
A-4	2	
Tanker		
C-1/KC-2		4
Combat helicopter		
AS332/532	7	
AS350	19	
AS355	9	
Bell 206	17	
EC725	3	13
Lynx 21/A	12	
S-61/SH-3D	9	
S-70	4	4
Training aircraft/helicopters		
TA-4	1	
<b>BRUNEI</b>		
<b>ROYAL BRUNEI AIR FORCE</b>		
Type	Active	Ordered
Transport		
C-130J		1*
CN235	1	
Combat helicopter		
Bell 212/214	9	
BO105	6	
S-70/i	12	4
Training aircraft/helicopters		
Bell 206	3	
PC-7	4	
<b>BULGARIA</b>		
<b>BULGARIAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
MiG-21	3	
MiG-29	15	
Su-25	12	
Special mission		
An-30 (Recce)	1	
Transport		
C-27J	3	
PC-12	1	
Combat helicopter		
AS532	12	2
Bell 206	2	
Mi-17	4	
Training aircraft/helicopters		
Bell 206	4	2
L-39	3	
PC-9	5	
<b>BULGARIAN NAVY</b>		
Type	Active	Ordered
Combat helicopter		
AS565	3	
<b>BURKINA FASO</b>		
<b>BURKINA FASO AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
EMB-314	3	
Transport		
AT-802	1	
CN235	1	
HS 748	1	
King Air 200	1	
Combat helicopter		
AS350	1	
Mi-17	3	
Mi-35	2	
Training aircraft/helicopters		
SF-260	4	
<b>BURUNDI</b>		
<b>BURUNDI NATIONAL ARMY</b>		
Type	Active	Ordered
Combat helicopter		
Mi-24	3	
SA316	3	
SA342	6	

Training aircraft/helicopters		
SF-260	5	
<b>CAMBODIA</b>		
<b>ROYAL CAMBODIAN AIR FORCE</b>		
Type	Active	Ordered
Transport		
BN-2	1	
MA60	2	
Y-12	2	
Combat helicopter		
AS350	1	
AS355	1	
Mi-8/17	5	
Z-9	9	
<b>CAMEROON</b>		
<b>CAMEROON AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
Impala	5	
Transport		
Arava	1	
C-130H	3	
CN235	1	
MA60	1	
Combat helicopter		
Bell 206	1	
Bell 412	1	
Mi-8/17	2	3
SA318	1	
SA330	2	
SA342	3	
Z-9	2	2
Training aircraft/helicopters		
Alpha Jet	5	
Magister	6	
<b>CANADA</b>		
<b>ROYAL CANADIAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
F/A-18A	64	
F-35A		65*
Special mission		
DHC-5 (SAR)	6	
P-3 (CP-140) (MPA)	18	
Tanker		
A310	2	
KC-130H	4	
Transport		
A310	3	
C-17	4	
C-130E/H	9	
C-130J	17	
DHC-6	4	
King Air 200	2	
Combat helicopter		
AW101 (SAR)	14	
Bell 412	88	
CH-47F	15	
S-61/SH-3A	26	
S-92	4	23
Training aircraft/helicopters		
Bell 206 (Allied Wings)	13	
Bell 412 (Allied Wings)	9	
CT-114	27	
Dash 8	4	
F/A-18B	26	
G120A (Allied Wings)	13	
Hawk 115 (NFTC)	16	
King Air 90	7	
T-6A (NFTC)	25	
<b>CENTRAL AFRICAN REPUBLIC</b>		
<b>CENTRAL AFRICAN REPUBLIC AIR FORCE</b>		
Type	Active	Ordered
Transport		
BN-2	2	
Combat helicopter		
AS350/550	2	
<b>CHAD</b>		
<b>CHAD AIR FORCE</b>		
Type	Active	Ordered

China's II-76-based KJ-2000 airborne  
early warning platform was among the  
attractions at Airshow China in Zhuhai



Re: Features

<b>Combat aircraft</b>			
MiG-29			3
Su-25	8		
<b>Transport</b>			
An-26	3		
C-27J	1		1
C-130H	1		
<b>Combat helicopter</b>			
AS550	6		
Mi-17/171	6		
Mi-25/35	5		
SE3160	2		
<b>Training aircraft/helicopters</b>			
PC-7	1		
PC-9	1		
SF-260	1		
<b>CHILE</b>			
<b>CHILEAN AIR FORCE</b>			
<b>Type</b>	<b>Active</b>	<b>Ordered</b>	
<b>Combat aircraft</b>			
F-5E	9		
F-16A/C	35		
<b>Special mission</b>			
707 (AEW)	1		
SR22 (Recce)	2		1
<b>Tanker</b>			
KC-135E	3		
<b>Transport</b>			
737	1		
C-130B/H	3		
C212	3		
Citation CJ1	4		
DHC-6	11		
KC-390			6*
<b>Combat helicopter</b>			
Bell 412	15		
UH-1H	14		
<b>Training aircraft/helicopters</b>			
Bell 206	4		
EMB-314	12		
F-5F	2		
F-16B/D	11		
T-35	27		5
<b>CHILEAN ARMY</b>			
<b>Type</b>	<b>Active</b>	<b>Ordered</b>	
<b>Transport</b>			
C212	2		
Cessna 208	3		
CN235	3		
<b>Combat helicopter</b>			
AS350	4		
AS355	1		
AS532	9		2+12*
MD530	10		
SA330	4		
<b>CHILEAN NAVY</b>			
<b>Type</b>	<b>Active</b>	<b>Ordered</b>	
<b>Special mission</b>			
C295 (MPA)	3		4*

EMB-110 (MPA)	5		
P-3A (MPA)	3		
<b>Transport</b>			
C295			1*
<b>Combat helicopter</b>			
AS332/532	7		
AS365	8		
BO105	4		
<b>Training aircraft/helicopters</b>			
Bell 206	6		
PC-7	7		
<b>CHINA</b>			
<b>PEOPLE'S LIBERATION ARMY AIR FORCE</b>			
<b>Type</b>	<b>Active</b>	<b>Ordered</b>	
<b>Combat aircraft</b>			
H-6	120		
J-7	388		
J-8	96		
J-10	200		
J-11/Su-27/30/35	272		24*
JH-7	72		
Q-5	118		
<b>Special mission</b>			
737 (MPA)	2		
An-30 (EW)	4		
Challenger 870 (Recce)	5		2
II-76 (KJ-2000) (AEW)	5		
Tu-154 (EW)	3		
Y-8 (EW)	17		
Y-8 (KJ-200) (AEW)	7		
<b>Tanker</b>			
II-78	1		2*
<b>Transport</b>			
II-76	14		7*
MA60	9		
Tu-154	6		
Y-7	43		
Y-8	61		
Y-9	7		
<b>Combat helicopter</b>			
Mi-171	10		
Z-8	34		
Z-9	42		
<b>Training aircraft/helicopters</b>			
JJ-7	35		
JL-8	170		
Y-7	13		
<b>PEOPLE'S LIBERATION ARMY GROUND FORCE</b>			
<b>Type</b>	<b>Active</b>	<b>Ordered</b>	
<b>Transport</b>			
Y-7	7		
Y-8	3		
<b>Combat helicopter</b>			
Mi-17/171	242		
S-70	20		
Z-8	53		
Z-9	70		
Z-10	91		30
Z-11	46		

Z-19	105		15
<b>Training aircraft/helicopters</b>			
AS350	1		
EC120	93		57
<b>PEOPLE'S LIBERATION ARMY NAVAL FORCE</b>			
<b>Type</b>	<b>Active</b>	<b>Ordered</b>	
<b>Combat aircraft</b>			
H-6	14		
J-7	30		
J-8	47		
J-10	6		
J-15/Su-30/33	27		50*
JH-7	34		
Q-5	30		
<b>Special mission</b>			
SH-5 (SAR)	3		
Y-8 (EW)	13		
Y-8 (MPA)	3		
Y-8 (KJ-200) (AEW)	3		
<b>Transport</b>			
Y-7	18		
Y-8	14		
<b>Combat helicopter</b>			
AS365/565	6		
Ka-27	1		
Ka-28	17		
Ka-31	9		
Z-8	27		
Z-9	28		
Z-18	5		
<b>Training aircraft/helicopters</b>			
JJ-6	14		
JL-8	11		
JL-9	2		
Mi-8	8		
Y-7	5		
<b>COLOMBIA</b>			
<b>COLOMBIAN AIR FORCE</b>			
<b>Type</b>	<b>Active</b>	<b>Ordered</b>	
<b>Combat aircraft</b>			
A-37	7		
BT-67	6		
EMB-314	24		
Kfir	20		
OV-10	7		
<b>Special mission</b>			
Cessna 208 (Recce)	6		
Citation Ultra (MPA)	5		
King Air 300/350 (EW)	3		
Metro III (EW)	1		
Turbo Commander (MPA)	2		
<b>Tanker</b>			
707	1		
767	1		
<b>Transport</b>			
727	2		
737	2		
Arava	1		
C-130B/H	7		





C212	4
C295/CN235	9
Cessna 208	10
EMB-110	2
KC-390	12*
King Air 90/350	8
PA-31	1
Turbo Commander	1
<b>Combat helicopter</b>	
Bell 205	2
Bell 206	12
Bell 212	10
MD500/530	10
S-70/AH/MH/UH-60L	24
UH-1H	50
<b>Training aircraft/helicopters</b>	
EMB-312	14
Lancair T90/-C/Synergy	50
T-37	17
<b>COLOMBIAN ARMY</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Special mission</b>	
King Air 200/350 (EW)	4
<b>Transport</b>	
An-32	2
C212	2
Cessna 208	7
King Air 90/200/350	4
Turbo Commander	3
<b>Combat helicopter</b>	
Mi-17	21
S-70/i/UH-60L	59
UH-1H/N	44
<b>COLOMBIAN NAVY</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Special mission</b>	
CN235 (MPA)	3
<b>Transport</b>	
C212	1
Cessna 208	3
King Air 350	1
<b>Combat helicopter</b>	
AS555	2
Bell 212/412	8
BK117	1
B0105	2
Mi-8	1
UH-1N	6
<b>CONGO</b>	
<b>CONGOLESE AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
Mirage F1	4
<b>Transport</b>	
An-32	2
CN235	1
<b>Combat helicopter</b>	
Mi-8/17	6
Mi-25/35	3
<b>CONGOLESE NAVY</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat helicopter</b>	
Mi-14	1
<b>CONGO (DEMOCRATIC REPUBLIC)</b>	
<b>DEMOCRATIC REPUBLIC OF CONGO AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
MiG-23	2
Su-25	4
<b>Transport</b>	
727	2
An-12	5
An-26	2
<b>Combat helicopter</b>	
Mi-2	2
Mi-8/17	4
Mi-24	8
Mi-26	1
SA316	2
SA330	10

<b>CROATIA</b>	
<b>CROATIAN AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
MiG-21	7
<b>Special mission</b>	
CL-415 (Firefighting)	6
PC-9 (EW)	3
<b>Transport</b>	
AT-802	5
<b>Combat helicopter</b>	
Mi-8/17/171	22
<b>Training aircraft/helicopters</b>	
Bell 206	8
PC-9	17
<b>CUBA</b>	
<b>CUBAN REVOLUTIONARY AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
MiG-21	12
MiG-23	24
MiG-29	3
<b>Transport</b>	
An-26	2
<b>Combat helicopter</b>	
Mi-8/17	10
Mi-35	4
<b>Training aircraft/helicopters</b>	
L-39	25
<b>CYPRUS</b>	
<b>CYPRUS NATIONAL GUARD</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Transport</b>	
BN-2	1
<b>Combat helicopter</b>	
AW139	3
Mi-35	11
SA342	4
<b>CZECH REPUBLIC</b>	
<b>CZECH AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
Gripen C	12
L-159A	19
<b>Special mission</b>	
L-410 (Survey)	2
<b>Transport</b>	
C295	4
KC-390	2*
L-410	6
Yak-40	1

<b>Combat helicopter</b>	
Mi-2	2
Mi-17/171	27
Mi-24/35	15
W-3	10
<b>Training aircraft/helicopters</b>	
Gripen D	2
L-39	8
L-159T	4
<b>DENMARK</b>	
<b>ROYAL DANISH AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
F-16A	36
F-35A	30*
<b>Special mission</b>	
Challenger 604 (MPA)	3
<b>Transport</b>	
C-130J	4
<b>Combat helicopter</b>	
AS550	12
AW101	13
Lynx 90	7
S-70/MH-60R	9
<b>Training aircraft/helicopters</b>	
F-16B	11
<b>DJIBOUTI</b>	
<b>DJIBOUTI AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Transport</b>	
Cessna 208	1
L-410	1
MA60	1
<b>Combat helicopter</b>	
AS355	1
Mi-8/17	2
Mi-35	2
<b>DOMINICAN REPUBLIC</b>	
<b>DOMINICAN REPUBLIC AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
EMB-314	8
<b>Transport</b>	
C212	3
Turbo Commander	1
<b>Combat helicopter</b>	
Bell 412	2
OH-58	12
UH-1H	11
<b>Training aircraft/helicopters</b>	
R22	4



**Armed EMB-314  
Super Tucanos are  
operational in the  
Dominican Republic**

US Air Force

Schweizer 333	2	
T-35	4	
<b>DOMINICAN REPUBLIC ARMY</b>		
Type	Active	Ordered
Combat helicopter		
OH-58	8	
Training aircraft/helicopters		
R44	3	
<b>ECUADOR</b>		
<b>ECUADORIAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
Cheetah C	8	2
Kfir	8	
Transport		
727	2	
737	1	
C-130B/H/L-100	4	
C295	3	
DHC-6	3	
HS 748	1	
Combat helicopter		
Dhruv	3	1
Training aircraft/helicopters		
Bell 206	8	
Cheetah D	2	
DA20	7	4
EMB-314	17	
T-34	13	
<b>ECUADORIAN ARMY AVIATION</b>		
Type	Active	Ordered
Transport		
Arava	4	
C212	2	
CN235	2	
King Air 200	1	
Combat helicopter		
AS332	3	
AS550	6	2
Mi-171	8	
SA315	5	
SA330	1	
SA342	8	
<b>ECUADORIAN NAVY</b>		
Type	Active	Ordered
Special mission		
CN235 (MPA)	2	
King Air 200 (MPA)	4	
Transport		
King Air 300/350	2	
Combat helicopter		
Bell 206	4	
Bell 430	3	
Training aircraft/helicopters		
T-34	2	
T-35	4	
<b>EGYPT</b>		
<b>EGYPTIAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
Alpha Jet	15	
F-4E	34	
F-7	60	
F-16A/C	157	12
MiG-21	56	
MiG-29		24*
Mirage 5E2/SDE/SDR	76	
Mirage 2000EM	15	
Special mission		
Beech 1900 (Calibration)	2	
Beech 1900 (EW)	4	
E-2C (AEW)	7	
Transport		
An-74	3	
Beech 1900	4	
C-130H	21	
C295	11	9
DHC-5	8	
King Air 200	1	
Combat helicopter		

AH-64D	36	10
AW109	3	
AW139	2	
CH-47D	19	6*
Mi-8/17	60	
S-70/UH-60M	2	4*
SA342	90	
Sea King	23	
SH-2G	10	
Training aircraft/helicopters		
Alpha Jet	30	
EMB-312	54	
F-16B/D	51	
G115	74	
K-8	120	
L-39/59	49	
Mirage 5SDD	6	
Mirage 2000BM	4	
<b>EL SALVADOR</b>		
<b>SALVADORAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
A-37	15	
Transport		
Arava	3	
BT-67	1	
Combat helicopter		
Bell 412	4	
MD500	8	
Schweizer 269	5	
UH-1H/M	13	
Training aircraft/helicopters		
T-35	3	
<b>EQUATORIAL GUINEA</b>		
<b>EQUATORIAL GUINEA AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
Su-25	4	
Transport		
An-72	1	
Combat helicopter		
Ka-29	1	
Mi-26	1	
Mi-35	7	
Training aircraft/helicopters		
L-39	2	
<b>ERITREA</b>		
<b>ERITREAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
MiG-29	5	
Su-27	2	
Transport		
King Air 200	1	
Y-12	4	
Combat helicopter		
Bell 412	3	
Mi-17	4	
Mi-24/35	6	
Training aircraft/helicopters		
M-290TP	8	
MB-339	5	
<b>ESTONIA</b>		
<b>ESTONIAN AIR FORCE</b>		
Type	Active	Ordered
Training aircraft/helicopters		
L-39	2	
R44	4	
<b>ETHIOPIA</b>		
<b>ETHIOPIAN AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
MiG-23	10	
Su-27	14	
Transport		
757	1	
An-12	3	
An-32	1	
C-130B/E	2	
Combat helicopter		

Mi-8/17	14	
Mi-24/35	8	
SA316	3	
Training aircraft/helicopters		
L-39	7	
SF-260	4	
<b>ETHIOPIAN ARMY AVIATION</b>		
Type	Active	Ordered
Transport		
DHC-6	2	
Combat helicopter		
UH-1H	12	
<b>FINLAND</b>		
<b>FINNISH AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
F-18C	54	
Special mission		
C295 (EW)	1	
F27 (EW)	1	
Transport		
C295	2	4*
Learjet 35	3	
PC-12NG	6	
Training aircraft/helicopters		
F-18D	7	
Hawk 51/A/66	45	
M-290TP	9	
<b>FINNISH ARMY</b>		
Type	Active	Ordered
Combat helicopter		
MD500	2	
NH90	17	3
Training aircraft/helicopters		
MD500	4	
<b>FRANCE</b>		
<b>FRENCH AIR FORCE</b>		
Type	Active	Ordered
Combat aircraft		
Mirage 2000C	24	
Mirage 2000D	66	
Mirage 2000N	24	
Mirage 2000-5	26	
Rafale B/C	90	38+101*
Special mission		
707 (E-3F) (AEW)	4	
C160 (ELINT)	2	
Tanker		
A330		12*
C/KC-135	14	
Transport		
A310	3	
A400M	5	45
C-130H	14	
C160	36	
CN235	27	
DHC-6	5	
TBM 700	15	
Combat helicopter		
AS332/532	8	
AS550	1	
AS555	40	
EC725	11	
SA330	27	
Training aircraft/helicopters		
Alpha Jet	86	
EMB-121	22	
G120 (Airbus Defence & Space)	18	
Mirage 2000B	7	
SR20 (Airbus Defence & Space)	12	
SR22 (Airbus Defence & Space)	7	
TB30	33	
<b>FRENCH ARMY</b>		
Type	Active	Ordered
Transport		
PC-6	5	
TBM 700	8	
Combat helicopter		
AS532	23	
EC725	8	



NH90	10	58
SA330	89	
SA341/342	181	
Tiger	46	33
<b>Training aircraft/helicopters</b>		
AS555	17	
EC120 (Helidax)	35	
SA330	1	
SA341/342	20	
<b>FRENCH NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
Rafale M	27	8+12*
Super Etendard	26	
<b>Special mission</b>		
ATL-2 (MPA)	22	
E-2C (AEW)	3	
Falcon 20/200 (MPA)	5	
Falcon 50 (MPA)	5	
<b>Transport</b>		
EMB-121	10	
Falcon 10	6	
<b>Combat helicopter</b>		
AS365/565	27	
EC725	2	
Lynx HAS2/4	21	
NH90	11	16
SA316/319/SE3160	23	
<b>Training aircraft/helicopters</b>		
Jetstream 41	2	
SR20 (Airbus Defence & Space)	4	
<b>GABON</b>		
<b>GABON AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
Mirage 5G	3	
Mirage F1	6	
<b>Transport</b>		
C-130H	1	
CN235	1	
<b>Combat helicopter</b>		
AS332	2	
AS350	1	
EC120	1	
EC135	2	
SA319	2	
SA330	5	
SA342	3	
<b>Training aircraft/helicopters</b>		
Mirage 5DG	2	
T-34	4	
<b>GAMBIA</b>		
<b>GAMBIA AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
Su-25	1	
<b>Transport</b>		
AT-802	2	
<b>GEORGIA</b>		
<b>GEORGIAN LAND FORCES</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
Su-25	11	
<b>Transport</b>		
An-28	2	
<b>Combat helicopter</b>		
Mi-8/17/171	15	
Mi-14	2	
Mi-24	9	
UH-1H	12	
<b>Training aircraft/helicopters</b>		
L-29	4	
L-39	4	
<b>ABKHAZIAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
Mi-17	1	
Mi-35	2	
<b>Training aircraft/helicopters</b>		
L-39	5	



E-2C Hawkeyes are deployed aboard the French navy aircraft carrier *Charles de Gaulle*

<b>GERMANY</b>		
<b>GERMAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
Eurofighter	76	25
Tornado ECR	29	
Tornado IDS	87	
<b>Tanker</b>		
A310	4	
<b>Transport</b>		
A310	1	
A400M		53
C160	68	
<b>Combat helicopter</b>		
CH-53G	79	
<b>Training aircraft/helicopters</b>		
Eurofighter	21	9
G120 (Lufthansa)	6	
Tornado IDS	7	
<b>GERMAN ARMY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
BO105	54	
EC145		15
NH90	32	31
SE313	1	
UH-1D	120	
Tiger	34	22
<b>Training aircraft/helicopters</b>		
EC135	14	
<b>GERMAN NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Special mission</b>		
Domier 228/NG (MPA/Recce)	1	
P-3C (MPA)	8	
<b>Combat helicopter</b>		
NH90		18
Sea King 41	20	
<b>Training aircraft/helicopters</b>		
EC135	1	
<b>GHANA</b>		
<b>GHANA AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Special mission</b>		
DA42 (Recce)	2	

<b>Transport</b>		
C295	2	
F27	1	
Y-12		2*
<b>Combat helicopter</b>		
AW109	2	
Bell 412	1	
Mi-17/171	7	6
Mi-35		4*
Z-9		4
<b>Training aircraft/helicopters</b>		
DA42	1	
K-8	4	
<b>GREECE</b>		
<b>HELLENIC AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F/Rf-4E	49	
F-16C	116	
Mirage 2000EG	17	
Mirage 2000-5/Mk II	25	
<b>Special mission</b>		
C-130H (EW)	2	
CL-415 (Firefighting)	6	
ERJ-145 (AEW)	4	
<b>Transport</b>		
C-27J	8	
C-130B/H	13	
CL-215	13	
CL-415	1	
<b>Combat helicopter</b>		
AS332	12	
Bell 205	12	
<b>Training aircraft/helicopters</b>		
F-16D	41	
Mirage 2000BG	2	
T-2C/E	40	
T-6A	42	
<b>HELLENIC ARMY AVIATION</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Special mission</b>		
King Air 200 (Survey)	2	
<b>Combat helicopter</b>		
AH-64A/D	29	
Bell 205	27	

Bell 206	11	
CH-47D	15	
NH90	9	11+14*
UH-1H	69	
Training aircraft/helicopters		
Schweizer 269	19	
HELLENIC NAVY		
Type	Active	Ordered
Combat helicopter		
Bell 212	8	
S-70	11	
Training aircraft/helicopters		
SA319	2	
GUATEMALA		
GUATEMALAN AIR FORCE		
Type	Active	Ordered
Combat aircraft		
A-37	3	
PC-7	1	
Transport		
Arava	1	
BT-67	3	
Cessna 208	1	
F27	1	
King Air 90/200	2	
Combat helicopter		
Bell 205	1	
Bell 206	1	
Bell 212/412	3	
UH-1H	15	
Training aircraft/helicopters		
T-35	4	
GUINEA		
GUINEA AIR FORCE		
Type	Active	Ordered
Combat aircraft		
MiG-21	3	
Combat helicopter		
AS350	1	
Mi-17	2	
Mi-24/25	3	
SA342	1	
GUYANA		
GUYANA DEFENCE FORCE		
Type	Active	Ordered
Transport		
Skyvan	1	
Y-12	1	
Combat helicopter		
Bell 206	2	
Bell 412	1	
HONDURAS		
HONDURAN AIR FORCE		
Type	Active	Ordered
Combat aircraft		
A-37	9	
F-5E	3	
Special mission		
King Air 200 (MPA)	1	
Transport		
Arava	1	
C-130A	1	
Turbo Commander	2	
Combat helicopter		
AS350	1	
Bell 412	4	
UH-1H	1	
Training aircraft/helicopters		
EMB-312	3	
F-5F	1	
HUNGARY		
HUNGARIAN AIR FORCE		
Type	Active	Ordered
Combat aircraft		
Gripen C	12	
Transport		
An-26	4	
Combat helicopter		
Mi-8/17	15	
Training aircraft/helicopters		

Gripen D	2	
INDIA		
INDIAN AIR FORCE		
Type	Active	Ordered
Combat aircraft		
Jaguar M/S	117	
MiG-21	247	
MiG-27	87	
MiG-29	66	
Mirage 2000H	44	
Rafale C		149*
Su-30MKI	161	92
T-50 (Sukhoi)		144*
Tejas LCA	1	19+40*
Special mission		
707 (Recce)	5	
ERJ-145 (AEW)		3
G100 Astra (Recce)	2	
Global 5000 (Recce)	1	
Gulfstream III (EW)	3	
IL-76 (AEW)	3	2
Tanker		
A330		6*
IL-78	7	
Transport		
An-32	100	
C-17	9	1+6*
C-130J	5	6+1*
Domier 228	40	
HS 748	59	
IL-76	17	
Medium Transport Aircraft		45*
Combat helicopter		
AH-64E	22	
CH-47F	15	
Dhruv ALH	46	65
Light Combat Helicopter		65
Mi-8/17	222	34
Mi-24/35	20	
Mi-26	3	
SA315	14	1
SA316/319	74	
Training aircraft/helicopters		
Hawk 132	65	40+20*
HJT-16 Kiran	81	
Jaguar T	30	
Mirage 2000TH	10	
PC-7 Mk II	49	26+106*
Rafale B		40*
Saras	15	
Tejas LCA	20	
INDIAN ARMY AVIATION		
Type	Active	Ordered
Combat helicopter		
Dhruv ALH	73	151
Light Combat Helicopter		114
SA315	27	18
SA316	4	
INDIAN NAVY		
Type	Active	Ordered
Combat aircraft		
MiG-29/K	23	22
Sea Harrier FRS51	8	
Tejas LCA		8
Tu-142	8	
Special mission		
737 (P-8I) (MPA)	6	2+16*
BN-2 (MPA)	8	
Domier 228 (MPA)	26	
IL-18 (MPA)	5	
Transport		
Saras		15
US-2		18*
Combat helicopter		
Dhruv ALH	8	16
Ka-28	14	4
Ka-31	14	
S-61/UH-3H	8	
SA316/319	30	
Sea King 42	27	

Training aircraft/helicopters		
Harrier T4/60	3	
Hawk 132	5	12
HJT-16 Kiran	20	
INDONESIA		
INDONESIAN AIR FORCE		
Type	Active	Ordered
Combat aircraft		
EMB-314	8	8
F-5E	6	
F-16A	8	18
Hawk 209	14	
Su-27/30	16	
Special mission		
737 (MPA)	3	
CN235 (MPA)	1	2
Tanker		
KC-130B	1	
Transport		
C-130B/H/L-100	18	
C212	8	5*
C295/CN235	13	2
F27	3	
PC-6	2	
Combat helicopter		
AS332	7	
BO105	4	
EC725	1	5
SA330	11	
Training aircraft/helicopters		
EC120	10	
F-5F	3	
F-16B	5	3
G120TP	10	8
Hawk 53/109	7	
KT-1	16	2
SF-260	18	
T-34	15	
T-50	16	
INDONESIAN ARMY		
Type	Active	Ordered
Transport		
BN-2	1	
C212	6	
Turbo Commander	1	
Combat helicopter		
AH-64E		8
AS355		6
AS550	1	5
Bell 205	12	
Bell 412	37	
BO105	20	
Mi-17	11	6
Mi-35	5	
SA316	7	
Schweizer 269	14	
Training aircraft/helicopters		
EC120	2	
INDONESIAN NAVY		
Type	Active	Ordered
Special mission		
C212 (MPA)	6	
CN235 (MPA)	3	2+3*
Nomad 22/24 (MPA)	29	
Transport		
C212	9	1
Nomad 22	1	
Combat helicopter		
AS332	1	
AS565		11
Bell 412	3	
BO105	8	
EC120	2	
Training aircraft/helicopters		
EC120	2	
IRAN		
ISLAMIC REPUBLIC OF IRAN AIR FORCE		
Type	Active	Ordered
Combat aircraft		
F-4D/E/RF-4E	42	



F-5E/Saegheh	25
F-7	17
F-14A	24
MiG-29	20
Mirage F1EQ	9
Su-24	24
<b>Special mission</b>	
707 (EW)	1
F27 (Survey)	1
P-3F (MPA)	5
<b>Tanker</b>	
707	3
747	3
<b>Transport</b>	
707	1
747	2
C-130E/H	31
F27	9
Il-76	5
PC-6	13
<b>Combat helicopter</b>	
Bell 206	1
Bell 212	2
<b>Training aircraft/helicopters</b>	
Bell 206	1
F-5B/F	21
FT-7	4
Mirage F1BQ	4
PC-7	35
<b>ISLAMIC REPUBLIC OF IRAN ARMY</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Transport</b>	
F27	2
Turbo Commander	1
<b>Combat helicopter</b>	
AH-1J	12
Bell 206	3
Bell 214	22
CH-47C	40
<b>ISLAMIC REPUBLIC OF IRAN NAVY</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Transport</b>	
F27	3
<b>Combat helicopter</b>	
Bell 212	4
Mi-171	5
RH-53D	6
S-61/SH/ASH-3D	8
<b>IRANIAN REVOLUTIONARY GUARD</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
Su-25	9
<b>Transport</b>	
An-74	9
Falcon 20/200	2
Il-76	2
Y-12	8
<b>Combat helicopter</b>	
Mi-8	19
<b>Training aircraft/helicopters</b>	
EMB-312	13
<b>IRAQ</b>	
<b>IRAQI AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
AT-6C	24*
Cessna AC-208	3
F-16C	24
L-159A	25*
Su-25	9
<b>Special mission</b>	
Cessna 208 (Recce)	3
CH2000 (Recce)	8
King Air 350 (Recce)	5 1
SB7L-360 (Recce)	2
<b>Transport</b>	
An-32	6
C-130E	3
C-130J	6

King Air 350	1
<b>Combat helicopter</b>	
Bell 412	12*
SA342	6
<b>Training aircraft/helicopters</b>	
Bell 206	10
Cessna 208	3
F-16D	12
L-159B	2*
Lasta 95	20
T-50	24
T-6A	15
<b>IRAQI ARMY AVIATION COMMAND</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat helicopter</b>	
Bell 407	26
EC635	25
Mi-8/171	40
Mi-28	3 12+21*
Mi-35	10 16+12*
OH-58	8
UH-1H	15
<b>Training aircraft/helicopters</b>	
Bell 407	3
OH-58	1
<b>IRELAND</b>	
<b>IRISH AIR CORPS</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Special mission</b>	
BN-2 (Recce)	1
CN235 (MPA)	2
<b>Combat helicopter</b>	
AW139	6
EC135	2
<b>Training aircraft/helicopters</b>	
PC-9	7
<b>ISRAEL</b>	
<b>ISRAEL AIR AND SPACE FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
F-15A/C	42
F-15I	25
F-16C	76
F-16I	99
F-35I	2+48*
<b>Special mission</b>	
707 (AEW)	1
1124 Westwind (MPA)	3
Gulfstream G550 (AEW)	2 3*
Gulfstream G550 (SIGINT)	3
King Air 200 (Recce)	25
<b>Tanker</b>	
707	8
KC-130H	4
<b>Transport</b>	
707	1
AT-802	7
C-130E/H	12
C-130J	2 2+5*
King Air 200	2
<b>Combat helicopter</b>	
AH-64A/D	48
AS565	6
CH-53	23
S-70/UH-60A	48
V-22	6*
<b>Training aircraft/helicopters</b>	
A-4N/TA-4H/J	60
F-15B/D	16
F-16A/B/D	112
G120A (Elbit Systems)	17
King Air 200	2
M-346 (TOR Systems)	2 28
OH-58	18
T-6A	20
<b>ITALY</b>	
<b>ITALIAN AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	

AMX	42
Eurofighter	59 22
F-35A/B	9+66*
Tornado ECR	16
Tornado IDS	52
<b>Special mission</b>	
ATL-1 (MPA)	4
C-27J (Gunship)	1
Gulfstream III (Recce)	1
Gulfstream G550 (AEW)	2
P166 (Survey)	3
<b>Tanker</b>	
KC-130J	3
KC-767	4
<b>Transport</b>	
C-27J	11
C-130J	16
P180	17
<b>Combat helicopter</b>	
AW101	12+3*
AW139	14
Bell 212	33
MD500	2
<b>Training aircraft/helicopters</b>	
AMX-T	12
AW139	1
Eurofighter	12 2
M-345	30*
M-346	2 (stored) 6+9*
MB-339	72
MD500	44
Tornado IDS	8
<b>ITALIAN ARMY</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Transport</b>	
Dornier 228	3
P180	3
<b>Combat helicopter</b>	
AW109	15
AW129	59
Bell 205	60
Bell 206	25
Bell 212/412	29
CH-47C/F	16 14+4*
NH90	26 33
<b>ITALIAN NAVY</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat aircraft</b>	
AV-8B+	14
F-35B	15*
<b>Special mission</b>	
AW101 (AEW)	4
Bell 212 (Recce)	3
<b>Transport</b>	
P180	3
<b>Combat helicopter</b>	
AW101	18
Bell 212	35
NH90	9 37
S-61/SH-3D	7
<b>Training aircraft/helicopters</b>	
TAV-8	2
<b>IVORY COAST</b>	
<b>IVORY COAST AIR FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat helicopter</b>	
AS365	2
SA316/319	2
SA330	1
<b>JAMAICA</b>	
<b>JAMAICA DEFENCE FORCE</b>	
<b>Type</b>	<b>Active Ordered</b>
<b>Combat helicopter</b>	
Bell 206	2
Bell 407	3
Bell 412	2
<b>Training aircraft/helicopters</b>	
DA40	2
<b>JAPAN</b>	



#### JAPAN AIR SELF-DEFENCE FORCE

Type	Active	Ordered
<b>Combat aircraft</b>		
F-2A	63	
F/EF/RF-4EJ	71	
F-15J	154	
F-35A		4+38*
<b>Special mission</b>		
767 (AEW)	4	
Hawker 800 (SAR)	3	
C-1 (EW)	1	
E-2C (AEW)	13	
YS-11 (EW)	7	
<b>Tanker</b>		
KC-130H	1	
KC-767	4	
<b>Transport</b>		
C-1	26	
C-2	2	20
C-130H	15	
Gulfstream IV	5	
Hawker 800	27	
YS-11	3	
<b>Combat helicopter</b>		
CH-47J	16	
S-70/UH-60J	35	40*
<b>Training aircraft/helicopters</b>		
Beechjet 400	13	
F-2B	15	
F-15DJ	45	
T-3	48	
T-4	203	
YS-11	3	

#### JAPAN GROUND SELF-DEFENCE FORCE

Type	Active	Ordered
<b>Transport</b>		
King Air 350	7	
MU-2	4	
<b>Combat helicopter</b>		
AH-1S	74	
AH-64D	10	1
CH-47J/JA	58	2
MD500	105	
OH-1	38	112*
S-70/UH-60JA	36	1
UH-1H/J	153	
V-22		17*
<b>Training aircraft/helicopters</b>		
Enstrom 480	20	10

#### JAPAN MARITIME SELF-DEFENCE FORCE

Type	Active	Ordered
<b>Special mission</b>		
EP-3 (EW)	4	
Learjet 36 (Recce)	4	
P-1 (MPA)	7	5+60*
P/OP-3C (MPA)	82	
US-1 (SAR)	2	
US-2 (SAR)	5	
<b>Transport</b>		
C-130R	1	
King Air 90	5	
UP-3C/D	3	
YS-11	2	
<b>Combat helicopter</b>		
AW101	7	7
BK117	3	
MH-53E	8	
S-70/SH/UH-60J/K	113	1+4*
<b>Training aircraft/helicopters</b>		
EC135	10	3+2*
King Air 90	26	
MD500	8	
T-3	41	

#### JORDAN

##### ROYAL JORDANIAN AIR FORCE

Type	Active	Ordered
<b>Combat aircraft</b>		
AC235	2	
AT-802	6	



Lockheed Martin

Kuwait has an option to add to its trio of newly-delivered KC-130J tankers

F-5E	29	
F-16A	32	15
<b>Transport</b>		
C-130E/H	7	
C212	1	
C295	2	
Cessna 208	6	
<b>Combat helicopter</b>		
AH-1F	32	
AS332	10	
AS350	7	
EC635	9	
MD530/AH-6i	7	18*
S-70/UH-60L	10	
UH-1H	37	
<b>Training aircraft/helicopters</b>		
C-101	10	
F-5F	8	
F-16B	14	
MD500	4	
R44		8
T67M260 Firefly	13	

#### KAZAKHSTAN

##### KAZAKHSTAN AIR FORCE

Type	Active	Ordered
<b>Combat aircraft</b>		
MiG-23	3	
MiG-27	12	
MiG-29	39	
MiG-31	29	
Su-24	25	
Su-25	14	
Su-27	13	
<b>Transport</b>		
An-12	1	
An-24/26	5	
An-72	2	
C295	3	1+4*
Tu-154	1	
<b>Combat helicopter</b>		
EC145		2+23*
EC725		20*
Mi-17	46	
Mi-24	18	
Mi-26	2	2*
<b>Training aircraft/helicopters</b>		
L-39	20	

#### KENYA

##### KENYA AIR FORCE

Type	Active	Ordered
<b>Combat aircraft</b>		
F-5E	17	
<b>Special mission</b>		
Cessna 208 (Recce)		1
<b>Transport</b>		
Dash 8	3	
DHC-5	5	

Y-12	11	
<b>Combat helicopter</b>		
MD500	42	
Mi-171	2	
SA330	14	
Z-9	6	
<b>Training aircraft/helicopters</b>		
Bulldog	5	
F-5F	4	
G120A	6	
Tucano 51	12	

#### KUWAIT

##### KUWAIT AIR FORCE

Type	Active	Ordered
<b>Combat aircraft</b>		
F/A-18C	27	
<b>Tanker</b>		
KC-130J	3	5*
<b>Transport</b>		
C-17	2	
L-100	3	
<b>Combat helicopter</b>		
AH-64D	16	
AS332	4	
S-92	2	
SA330	6	
SA342	14	
<b>Training aircraft/helicopters</b>		
F/A-18D	7	
Hawk 62	10	
Tucano 52	12	

#### KYRGYZSTAN

##### KYRGYZ AIR FORCE

Type	Active	Ordered
<b>Combat helicopter</b>		
Mi-8/17	4	
Mi-24	2	
<b>LAOS</b>		
<b>LAO PEOPLE'S LIBERATION ARMY AIR FORCE</b>		
Type	Active	Ordered
<b>Transport</b>		
An-26	1	
MA60	2	
<b>Combat helicopter</b>		
Ka-32	2	
Mi-17	4	
Mi-26	1	
UH-1H	4	
Z-9	4	

#### LATVIA

##### LATVIAN AIR FORCE

Type	Active	Ordered
<b>Combat helicopter</b>		
Mi-17	4	

#### LEBANON

##### LEBANESE AIR FORCE

Type	Active	Ordered
------	--------	---------



Combat aircraft	
Cessna AC-208	3
Hunter 70	3
Combat helicopter	
S-61	3
SA330	11
SA342	7
UH-1H	27
Training aircraft/helicopters	
Bulldog	3
Hunter 66	1
R44	4
<b>LESOTHO</b>	
LESOTHO DEFENCE FORCE	
Type	Active Ordered
Transport	
C212	2
Combat helicopter	
Bell 206	1
Bell 412	3
B0105	1
EC135	1
<b>LIBYA</b>	
LIBYAN AIR FORCE	
Type	Active Ordered
Combat aircraft	
MiG-21	7
MiG-23	4
Mirage F1	2
Special mission	
An-32 (Recce)	1
Transport	
An-26	2
An-72	1
C-130H/L-100	3
C-130J	2*
Combat helicopter	
AW139	1
CH-47C	3
Mi-2	4
Mi-8/17/171	8
Mi-14	4
Mi-24/35	3
Training aircraft/helicopters	
L-39	1
<b>LITHUANIA</b>	
LITHUANIAN AIR FORCE	
Type	Active Ordered
Combat aircraft	
L-39	1
Transport	

C-27J	3
L-410	1
Combat helicopter	
AS365	3
Mi-8/17	5
<b>LUXEMBOURG</b>	
LUXEMBOURG AIR FORCE	
Type	Active Ordered
Transport	
A400M	1
<b>MACEDONIA</b>	
MACEDONIAN AIR FORCE	
Type	Active Ordered
Training aircraft/helicopters	
Bell 206	4
MACEDONIAN ARMY	
Type	Active Ordered
Combat helicopter	
Mi-17	6
Mi-24	4
UH-1H	2
<b>MALAWI</b>	
MALAWI ARMY AIR WING	
Type	Active Ordered
Transport	
Domier 228	3
Combat helicopter	
AS350/550	2
AS355	1
AS532	1
SA330	2
<b>MALAYSIA</b>	
ROYAL MALAYSIAN AIR FORCE	
Type	Active Ordered
Combat aircraft	
F/RF-5E	6
F/A-18D	8
Hawk 208	13
MiG-29	10
Su-30MKM	18
Special mission	
King Air 200 (MPA)	4
Tanker	
KC-130H	4
Transport	
A400M	4
C-130H	10
CN235	6
Combat helicopter	
EC725	12
S-61	29

SA316	15
Training aircraft/helicopters	
F-5F	3
Hawk 108	6
King Air 350	2
MB-339	8
PC-7/Mk II	40 5*
<b>ROYAL MALAYSIAN ARMY AIR CORPS</b>	
Type	Active Ordered
Combat helicopter	
AW109	11
<b>ROYAL MALAYSIAN NAVY</b>	
Type	Active Ordered
Combat helicopter	
AS555	6
Super Lynx 300	6
<b>MALDIVES</b>	
MALDIVES NATIONAL DEFENCE FORCE	
Type	Active Ordered
Combat helicopter	
Dhruv ALH	2
<b>MALI</b>	
MALI AIR FORCE	
Type	Active Ordered
Combat aircraft	
MiG-21	9
Special mission	
F406 Caravan II (MPA)	3*
Transport	
BN-2	1
Combat helicopter	
AS350	1
Mi-24	3
Training aircraft/helicopters	
SF-260	2
<b>MALTA</b>	
ARMED FORCES OF MALTA	
Type	Active Ordered
Special mission	
BN-2 (MPA)	2
King Air 200 (MPA)	2
Combat helicopter	
AW139	1 1+1*
SA316	3
<b>MAURITANIA</b>	
MAURITANIAN AIR FORCE	
Type	Active Ordered
Combat aircraft	
EMB-314	2 2
Special mission	
BN-2 (MPA)	3
Cessna 208 (MPA)	2 1
PA-31 (MPA)	2
Transport	
BT-67	1
Cessna 441 Conquest II	1
PC-6	1
Y-12	1
Combat helicopter	
AW109	2
Z-9	2
Training aircraft/helicopters	
EMB-312	4
SF-260	4
<b>MEXICO</b>	
MEXICAN AIR FORCE	
Type	Active Ordered
Combat aircraft	
F-5E	6
PC-7	37
Special mission	
ERJ-145 (AEW)	1
ERJ-145 (Recce)	2
Metro III (Recce)	4
Transport	
727	5
C-27J	4
C-130E/K/L-100	6
C-130J	2*
C295	6 4*



The Royal Malaysian Air Force has 12 combat search and rescue-roled EC725s in use

Mexico deployed this navy Mi-17 rotorcraft to the Partnership of the Americas exercise in Chile in August 2014. Its military operates 48 Mi-8/17-series transports



US Marine Corps

King Air 90/300/350	7	
PC-6	3	
Turbo Commander	5	
<b>Combat helicopter</b>		
AW109	3	
Bell 206	17	
Bell 212/412	32	
Bell 407		14
CH-53	2	
EC725	9	3
MD530	15	
Mi-8/17	27	3
S-70/UH-60M	4	31
<b>Training aircraft/helicopters</b>		
Bell 206	11	
F-5F	2	
G120TP		40*
PC-7	30	
PC-9	1	
SF-260	25	
T-6C+	12	
<b>MEXICAN NAVY</b>		
Type	Active	Ordered
<b>Special mission</b>		
C212 (MPA)	2	
CN235 (MPA)	6	1*
<b>Transport</b>		
C295	4	2
Dash 8	1	
King Air 350	3	1
Turbo Commander	4	
<b>Combat helicopter</b>		
AS555	2	
AS565	3	10*
B0105	5	
EC725	3	
MD902	5	
Mi-17	21	
S-70/UH-60M	3	4*
<b>Training aircraft/helicopters</b>		
Lancair IV/Super ES	4	
Legacy	2	
M-290TP	7	

MD500	3	
R22	1	
R44	1	
Schweizer 269	4	
T-6C+	2	
<b>MOLDOVA</b>		
<b>MOLDOVAN AIR FORCE</b>		
Type	Active	Ordered
<b>Transport</b>		
An-26	1	
<b>TRANSNISTRIAN AIR FORCE</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
Mi-2	1	
Mi-8	1	
<b>MONGOLIA</b>		
<b>MONGOLIAN AIR FORCE</b>		
Type	Active	Ordered
<b>Transport</b>		
An-26	3	
<b>Combat helicopter</b>		
Mi-8/17L	7	
<b>MONTENEGRO</b>		
<b>MONTENEGRO ARMY</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
SA341/342	5	
<b>MOROCCO</b>		
<b>ROYAL MOROCCAN AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
F-5E	22	
F-16C	16	
Mirage F1	15	
<b>Special mission</b>		
CL-415 (MPA)	5	
Falcon 20/200 (EW)	2	
King Air 200 (Research)	1	
<b>Tanker</b>		
KC-130H	2	
<b>Transport</b>		
C-27J	4	
C-130H	13	

CN235	6	
King Air 200/300/350	7	
<b>Combat helicopter</b>		
Bell 205	47	
Bell 206	5	
Bell 212	4	
CH-47D		3
SA330	26	
SA342	23	
<b>Training aircraft/helicopters</b>		
Alpha Jet	24	
Bell 206	17	
F-5F	4	
F-16D	8	
King Air 100	4	
T-6C	24	
<b>ROYAL MOROCCAN NAVY</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
AS565	3	
<b>MOZAMBIQUE</b>		
<b>MOZAMBIQUE AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
MiG-21	8	
<b>Transport</b>		
An-26	2	
<b>Combat helicopter</b>		
Mi-8	2	
Mi-25	2	
<b>Training aircraft/helicopters</b>		
EMB-312		3
L-39	1	
<b>MYANMAR</b>		
<b>MYANMAR AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
A-5	21	
F-6	1	
F-7	24	
G4	4	
MiG-29	31	
<b>Transport</b>		





Beech 1900	3	
BN-2	5	
F27	2	
FH-227	2	
PC-6	5	
Y-8	4	
Y-12	2	
<b>Combat helicopter</b>		
Bell 205	14	
Mi-2	22	
Mi-17	12	
Mi-35	9	
SA316/SE3160	13	
W-3	12	
<b>Training aircraft/helicopters</b>		
FT-7	6	
K-8	12	50
PC-7	16	
PC-9	10	
<b>MYANMAR NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
Ka-27		6*
<b>UNITED WA STATE ARMY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
Mi-8	5	
<b>NAMIBIA</b>		
<b>NAMIBIAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F-7	6	
<b>Transport</b>		
An-26	1	
Y-12	2	
<b>Combat helicopter</b>		
Mi-8	2	
Mi-24	2	
SA315	1	
SA316	2	
Z-9	1	
<b>Training aircraft/helicopters</b>		
FT-7	2	
K-8	12	
<b>NATO</b>		
<b>NATO</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Special mission</b>		
707 (E-3A) (AEW)	17	
<b>Transport</b>		
C-17 (Strategic Airlift Consortium)	3	
<b>NEPAL</b>		
<b>NEPAL ARMY AIR WING</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Transport</b>		
An-28	2	1
BN-2	1	
HS 748	1	
<b>Combat helicopter</b>		
AS350	1	
Dhruv ALH	4	
Mi-8	5	2
SA315	2	
SA316/319	4	
SA330	1	
<b>NETHERLANDS</b>		
<b>ROYAL NETHERLANDS AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F-16A	65	
F-35A	2	35*
<b>Tanker</b>		
KDC-10	2	
<b>Transport</b>		
C-130H	4	
<b>Training aircraft/helicopters</b>		
F-16B	10	
PC-7	13	
<b>NETHERLANDS DEFENCE HELICOPTER COMMAND</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>

<b>Combat helicopter</b>		
AH-64D	29	
AS532	9	
Bell 412	3	
CH-47D/F	17	
NH90	9	7
<b>NEW ZEALAND</b>		
<b>ROYAL NEW ZEALAND AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Special mission</b>		
P-3K (MPA)	6	
<b>Transport</b>		
757	2	
C-130H	3	
<b>Combat helicopter</b>		
AW109	5	3*
NH90	7	
SH-2G	2	8
UH-1H	8	
<b>Training aircraft/helicopters</b>		
King Air 200	4	
T-6C	7	4
<b>NICARAGUA</b>		
<b>NICARAGUAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Transport</b>		
An-26	2	
King Air 90	1	
<b>Combat helicopter</b>		
Bell 206	1	
MD500	2	
Mi-17/171	14	
<b>Training aircraft/helicopters</b>		
R44	1	
<b>NIGER</b>		
<b>NIGER AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
Su-25	2	
<b>Special mission</b>		
Cessna 208 (Recce)		1
DA42 (Recce)	2	
<b>Transport</b>		
C-130H	1	
Cessna 208	2	
Dornier 228	1	
<b>Combat helicopter</b>		
Mi-17	3	
Mi-24	1	
SA342	3	
<b>NIGERIA</b>		
<b>NIGERIAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F-7	10	
<b>Special mission</b>		
ATR 42 (MPA)	2	
<b>Transport</b>		
C-130H	4	
Dornier 128	11	
Dornier 228	6	
G222	2	
King Air 350	3	
<b>Combat helicopter</b>		
AS332	5	
AW139	1	
Mi-17/171	5	6
Mi-24/35	9	6+15*
<b>Training aircraft/helicopters</b>		
Alpha Jet	8	
AW109	13	
FT-7	2	
L-39	12	
<b>NIGERIAN NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
AW109	4	
Bell 206	1	
<b>NORTH KOREA</b>		
<b>KOREAN PEOPLE'S ARMY AIR FORCE</b>		

<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F-5 (Shenyang)	106	
F-6	97	
F-7	120	
H-5	80	
MiG-21	26	
MiG-23	56	
MiG-29	35	
Su-7	18	
Su-25	34	
<b>Transport</b>		
An-24	1	
<b>Combat helicopter</b>		
MD500	84	
Mi-2	46	
Mi-8	40	
Mi-14	8	
Mi-24	20	
Mi-26	4	
<b>Training aircraft/helicopters</b>		
FT-2	30	
FT-5	135	
<b>NORWAY</b>		
<b>ROYAL NORWEGIAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F-16A	47	
F-35A		4+48*
<b>Special mission</b>		
Falcon 20/200 (EW)	2	
P-3C/N (MPA)	6	
<b>Transport</b>		
C-130J	4	1*
<b>Combat helicopter</b>		
AW101		16+6*
Bell 412	18	
Lynx 86	2	
NH90	4	10
Sea King 43	11	
<b>Training aircraft/helicopters</b>		
F-16B	10	
<b>OMAN</b>		
<b>ROYAL AIR FORCE OF OMAN</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
Eurofighter		12+12*
F-16C	14	4
Hawk 203	10	
<b>Special mission</b>		
C295 (MPA)		3
Skyvan (MPA)	3	
<b>Transport</b>		
C-130H	3	
C-130J	3	
C295	4	1
<b>Combat helicopter</b>		
AS332	2	
Bell 205	5	
Bell 206	4	
NH90	15	4
SA330	2	
Super Lynx 120	15	
<b>Training aircraft/helicopters</b>		
F-16D	6	
Hawk 103/166	5	8
PC-9	12	
<b>PAKISTAN</b>		
<b>PAKISTAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F-7	140	
F-16A/C	45	
JF-17	49	50+50*
Mirage IIIEP/OF/RP	69	
Mirage 5EF/F/PA	84	
<b>Special mission</b>		
Falcon 20/200 (EW)	2	
King Air 350 (Recce)	4	
Saab 2000 (AEW)	4	

Y-8 (ZDK-03) (AEW)	3	1
<b>Tanker</b>		
IL-78	4	
<b>Transport</b>		
C-130B/E/L-100	16	
CN235	3	
Saab 2000	1	
Y-12	3	
<b>Combat helicopter</b>		
Bell 205	5	
Bell 412	1	
Mi-171	6	
SA330	1	
SE3160	10	
<b>Training aircraft/helicopters</b>		
F-16B/D	31	
FT-5	25	
FT-6	9	
FT-7	9	
K-8	39	
Mirage IIIBE/D/DP	17	
Mirage 5DPA	2	
SA316	8	
T-37	18	
<b>PAKISTAN ARMY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Transport</b>		
Citation Bravo	1	
King Air 350	1	
Turbo Commander	2	
Y-12	4	
<b>Combat helicopter</b>		
AH-1F	48	
AS550	23	4
Bell 206	19	
Bell 412	32	2
Mi-17/171	49	
SA315	18	
SA316	14	
SA330	45	
UH-1H	1	
<b>Training aircraft/helicopters</b>		
Schweizer 269	12	
<b>PAKISTAN NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Special mission</b>		
F27 (MPA)	7	
Hakwer 850 (Recce)	1	
P-3C (MPA)	6	
<b>Transport</b>		
ATR 72	2	
<b>Combat helicopter</b>		
Mi-14	2	
SA316/319	7	
Sea King 45	6	

Z-9	6	
<b>PANAMA</b>		
<b>NATIONAL AERONAVAL SERVICE OF PANAMA</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Transport</b>		
C212	3	
Cessna 208	3	
King Air 300	1	
<b>Combat helicopter</b>		
AW139	5	
Bell 205	1	
Bell 212/412	3	
Bell 407	1	
EC145	1	
MD500	1	
<b>Training aircraft/helicopters</b>		
T-35	4	
<b>PAPUA NEW GUINEA</b>		
<b>PAPUA NEW GUINEA DEFENCE FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Transport</b>		
Arava	3	
CN235	2	
<b>PARAGUAY</b>		
<b>PARAGUAYAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Transport</b>		
C212	4	
Cessna 208	2	
<b>Combat helicopter</b>		
AS350	3	
UH-1H	9	
<b>Training aircraft/helicopters</b>		
EMB-312	6	
T-35	10	
<b>PARAGUAYAN NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
AS350	2	
<b>PERU</b>		
<b>PERUVIAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
A-37	24	
MiG-29	19	
Mirage 2000P	7	
Su-22	17	
Su-25	18	
<b>Special mission</b>		
Learjet 36 (Recce)	1	
Metro 23 (Recce)	2	
<b>Transport</b>		
737	1	
An-32	2	
C-27J		2+10*

DHC-6	13	3
L-100	2	
Metro 23	1	
PC-6	1	
<b>Combat helicopter</b>		
Bell 212/412	3	
B0105	2	
Mi-17/171	11	
Mi-25/35	16	
<b>Training aircraft/helicopters</b>		
EMB-312	13	
KT-1	2	18
MB-339	5	
Mirage 2000DP	2	
Schweizer 269	6	
<b>PERUVIAN ARMY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Transport</b>		
An-28	2	
An-32	3	
Beech 1900	1	
Cessna 208	1	
King Air 350	1	
PA-31	1	
<b>Combat helicopter</b>		
AW109	2	
Mi-17/171	27	20
<b>Training aircraft/helicopters</b>		
Enstrom F-28/280	4	
R44	1	
<b>PERUVIAN NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Special mission</b>		
F60 (MPA)	2	
King Air 200 (MPA)	3	
<b>Transport</b>		
An-32	2	
F50	2	
F60	2	
<b>Combat helicopter</b>		
Bell 206	2	
Bell 212	2	
Mi-8	2	
S-61/UH-3H	5	
SH-2G		5
<b>Training aircraft/helicopters</b>		
Enstrom F-28	4	
T-34	2	
<b>PHILIPPINES</b>		
<b>PHILIPPINE AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
FA-50		12
OV-10	8	
<b>Transport</b>		
C-130B/H/T	3	2*
C212		2
C295		3*
F27	2	
Nomad 22	1	
Turbo Commander	1	
<b>Combat helicopter</b>		
AS550	4	
AW109	8	
Bell 205	8	
Bell 212/412	1	5
MD520	25	
S-76	9	
UH-1D/H	28	11
W-3	7	
<b>Training aircraft/helicopters</b>		
S-211	3	
SF-260	20	
<b>PHILIPPINE NAVAL AVIATION</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Transport</b>		
BN-2	6	
<b>Combat helicopter</b>		
AW109	3	2
SE313	1	



The Peruvian navy acquired two surplus Fokker 50 transports from the Netherlands

Ben Ullings/Aviationphotos.nl



POLAND			
POLISH AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
F-16C	36		
MiG-29	31		
Su-22	32		
Transport			
An-28	24		
C-130E	5		
C295	16		
Combat helicopter			
Mi-2	17		
Mi-8/17	12		
SW-4	24		
W-3	17		
Training aircraft/helicopters			
Cabri G2	5		
F-16D	12		
M-346		8+4*	
PZL-130	20		
TS-11	38		
POLISH LAND FORCES			
Type	Active	Ordered	
Combat helicopter			
Mi-2	43		
Mi-8/17	26		
Mi-25/35	29		
W-3	39		
Training aircraft/helicopters			
Mi-2	1		
POLISH NAVAL AIR ARM			
Type	Active	Ordered	
Special mission			
An-28 (MPA)	9		
Transport			
An-28	4		
Combat helicopter			
Mi-2	4		
Mi-14	10		
Mi-17	2		
SH-2G	4		
W-3	7		
PORTUGAL			
PORTUGUESE AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
F-16A	33		
Special mission			
C295 (MPA)	5		
P-3C (MPA)	5		
Transport			
C-130H	6		
C295	7		
KC-390		6*	
Combat helicopter			
AW101	12		
NH90		10	
SA316	7		
Training aircraft/helicopters			
Alpha Jet	8		
F-16B	5		
TB30	16		
PORTUGUESE NAVY			
Type	Active	Ordered	
Combat helicopter			
Lynx 95	5		
QATAR			
QATAR EMIRI AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
Alpha Jet	6		
Mirage 2000-5EDA	9		
Special mission			
737 (AEW)		3*	
Tanker			
A330		2*	
Transport			
C-17	4		
C-130J	4		

Combat helicopter			
AH-64E		24	
AW139	18		
NH90		22	
SA342	14		
Sea King	11		
Training aircraft/helicopters			
Mirage 2000-5DDA	4		
PC-21	2	22	
ROMANIA			
ROMANIAN AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
F-16A/B		12	
MiG-21	16		
Special mission			
An-30 (Recce)	2		
Transport			
An-26	2		
C-27J	6	1	
C-130H	4		
Combat helicopter			
SA/IAR330	59		
Training aircraft/helicopters			
IAR-99	19		
ROMANIAN NAVY			
Type	Active	Ordered	
Combat helicopter			
SA/IAR330	3		
RUSSIA			
RUSSIAN AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
MiG-29/35	253	16+37*	
MiG-31	134		
Su-24	280		
Su-25	199		
Su-27/30/35	300	49	
Su-34	51	73+16*	
T-50 (Sukhoi)	1	60*	
Tu-22M	70		
Tu-95	58		
Tu-160/M	13	14*	
Special mission			
An-12 (EW)	5		
An-26 (EW)	7		
An-30 (Recce)	13		
An-30 (Survey)	1		
Il-20/22 (Recce)	30		
Il-76 (A-50) (AEW)	16		
Il-86 (Communications)	4		
Mi-8/9/17 (EW)	16		
Tu-134 (Recce)	1		
Tu-204 (EW)	2	2	
Tanker			
Il-78	19	31*	
Transport			
An-12	53		
An-22	5		
An-26	97		
An-70		60*	
An-72	25		
An-124	10	20*	
An-140	5	5	
An-148	4	11	
Il-18	6		
Il-62	7		
Il-76	104	39+9*	
Il-96		10*	
Il-112		62*	
L-410	18		
Medium Transport Aircraft		100*	
Tu-134	9		
Tu-154	17		
Combat helicopter			
AS350	3		
AS355	2		
Ka-27	7		
Ka-52	49	107+25*	
Ka-60		100	

Ka-226	25	11	
Mi-8/17/171	493	123	
Mi-24/35	310	15	
Mi-26	40	6+16*	
Mi-28	71	25	
Training aircraft/helicopters			
Ansar	28	10	
L-39	201		
Mi-2	19		
Mi-28UB		60*	
Tu-134	33		
Yak-130	61	16+10*	
RUSSIAN NAVY			
Type	Active	Ordered	
Combat aircraft			
MiG-29/K	4	18	
Su-24	22		
Su-25	4		
Su-27/30/33	26	2+38*	
Tu-142	24		
Special mission			
An-26 (EW)	2		
Be-12 (SAR)	6		
Be-200 (SAR)		4	
Il-20/22 (EW)	3		
Il-38 (MPA)	15		
Transport			
An-12	5		
An-24/26	25		
An-72	6		
An-140	2	3	
Be-200		2+2*	
Il-18	1		
Il-114	1		
Tu-134	2		
Tu-154	1		
Combat helicopter			
Ansar	1		
Ka-27	82		
Ka-28	3		
Ka-29	3		
Ka-31	3		
Ka-52		4+28*	
Mi-8/17	9		
Training aircraft/helicopters			
Il-20	1		
MiG-29KUB		2	
Tu-134	3		
Yak-130		5+5*	
RWANDA			
RWANDAN AIR FORCE			
Type	Active	Ordered	
Combat helicopter			
Mi-17	9		
Mi-24	5		
SA342	4		
SAUDI ARABIA			
ROYAL SAUDI AIR FORCE			
Type	Active	Ordered	
Combat aircraft			
Eurofighter	26	28	
F-15C/S/SA	129	84	
Tornado IDS	81		
Special mission			
707 (E-3A) (AEW)	6		
King Air 350 (EW)	2	7*	
Tanker			
707 (KE-3A)	7		
A330	3	2*	
KC-130H	7		
KC-130J		2+3*	
Transport			
C-130H	33		
C-130J		20*	
Citation Bravo	4		
CN235	2		
Gulfstream IV	1		
Jetstream 31	1		
King Air 350	10		
Combat helicopter			





Björn Ståhlberg

Our data records 793 MiG-29 fighters as being in active duty, including four in Serbia

AS532	11	
Bell 212/412	36	
S-70/UH-60L		2
<b>Training aircraft/helicopters</b>		
Eurofighter	16	2
F-15D	20	
Hawk 65/A/165	45	22
PC-9	47	
PC-21	10	45
SR22	25	
<b>ROYAL SAUDI LAND FORCES</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
AH-64A/D/E	15	33
MD530	12	
OH-58	15	
S-70/UH-60L/M	43	48*
<b>Training aircraft/helicopters</b>		
Schweizer 269	19	
<b>ROYAL SAUDI NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
AS332/532	20	
AS365/565	26	
NH90		10*
<b>SAUDI ARABIAN NATIONAL GUARD</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
AH-6i		24+12*
AH-64E	3	9+24*
NH90		12*
S-70/UH-60M		20+4*
<b>SENEGAL</b>		
<b>SENEGAL AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
EMB-314		3
<b>Special mission</b>		
King Air 200 (Recce)	2	
<b>Transport</b>		
C212	1	
F27	3	
<b>Combat helicopter</b>		
AS355	1	
AW139	1	
Bell 206	2	
Mi-2	2	

Mi-17	2	
Mi-35	2	
UH-1H	1	
<b>Training aircraft/helicopters</b>		
TB30	2	
<b>SERBIA</b>		
<b>SERBIAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
G2	1	
G4	23	
J22	30	
MiG-21	10	
MiG-29	4	6*
<b>Transport</b>		
An-26	2	
PA-34	1	
<b>Combat helicopter</b>		
Mi-8/17	8	
SA341/342	31	
<b>Training aircraft/helicopters</b>		
Lasta 95	9	5
<b>SEYCHELLES</b>		
<b>SEYCHELLES AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Special mission</b>		
BN-2 (SAR)	1	
Y-12 (SAR)	1	
<b>Transport</b>		
Dornier 228	1	
<b>SIERRA LEONE</b>		
<b>REPUBLIC OF SIERRA LEONE DEFENCE FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
Mi-17	2	
Mi-24	2	
SA319	1	
<b>SINGAPORE</b>		
<b>REPUBLIC OF SINGAPORE AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F-5S	27	
F-15SG	32	8*
F-16C/D	60	
<b>Special mission</b>		
F50 (MPA)	5	
Gulfstream G550 (AEW)	4	

<b>Tanker</b>		
KC-130B/H	5	
KC-135R	4	
<b>Transport</b>		
C-130H	5	
F50	4	
<b>Combat helicopter</b>		
AH-64D	17	
AS332/532	32	
CH-47SD	16	
S-70	6	2
<b>Training aircraft/helicopters</b>		
EC120	5	
F-5T	9	
M-346	12	
PC-21	19	
<b>SLOVAKIA</b>		
<b>SLOVAK AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
MiG-29	8	
<b>Special mission</b>		
L-410 (Recce)	1	
<b>Transport</b>		
An-26	2	
C-27J		2+1*
L-410	6	
<b>Combat helicopter</b>		
Mi-2	3	
Mi-17	14	
<b>Training aircraft/helicopters</b>		
L-39	10	
<b>SLOVENIA</b>		
<b>SLOVENIAN ARMED FORCES</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Transport</b>		
L-410	1	
PC-6	2	
<b>Combat helicopter</b>		
AS532	4	
Bell 412	8	
<b>Training aircraft/helicopters</b>		
Bell 206	4	
PC-9	11	
<b>SOUTH AFRICA</b>		
<b>SOUTH AFRICAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
Gripen C	17	
<b>Special mission</b>		
Cessna 208 (EW)	1	
DC-3 (EW)	1	
DC-3 (MPA)	5	
<b>Transport</b>		
C-130B	6	
C212	3	
Cessna 208	8	
DC-3	4	
King Air 200/300	4	
PC-12	1	
<b>Combat helicopter</b>		
AW109	28	
BK117	6	
Oryx	46	
Rooivalk	12	
<b>Training aircraft/helicopters</b>		
Gripen D	9	
Hawk 120	23	
PC-7 Mk II	35	
<b>SOUTH AFRICAN NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
Super Lynx 300	4	
<b>SOUTH KOREA</b>		
<b>REPUBLIC OF KOREA AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F-4E	68	
F-5E	151	
F-15K	60	



F-16C	117	
F-35A		60*
FA-50	3	17
<b>Special mission</b>		
737 (AEW)	4	
Falcon 2000LX/S (EW)		4*
Hawker 800 (Recce)	8	
<b>Transport</b>		
C-130H	12	
C-130J	4	
CN235	18	6*
<b>Combat helicopter</b>		
AS332	3	
Bell 412	3	
CH-47D	5	
Ka-32	7	
MD500	25	
S-70/HH/UH-60P	29	
<b>Training aircraft/helicopters</b>		
F-5F	35	
F-16D	51	
KC-100		23*
KT-1	106	
T-50/B	63	
TA-50	22	
<b>REPUBLIC OF KOREA ARMY</b>		
Type	Active	Ordered
<b>Transport</b>		
King Air 90	1	
<b>Combat helicopter</b>		
AH-1J/S	77	
AH-64E		36
BO105	12	
CH-47D	23	
MD500	252	
S-70/UH-60L/P	68	
Surion	28	64+153*
UH-1H	91	
<b>REPUBLIC OF KOREA MARINE CORPS</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
Surion		22+18*
<b>REPUBLIC OF KOREA NAVY</b>		
Type	Active	Ordered
<b>Special mission</b>		
P-3C/K (MPA)	16	
S-3B (MPA)		18*
<b>Transport</b>		
F406 Caravan II	5	
<b>Combat helicopter</b>		
AW159		8
Lynx 99/A	24	
S-70/UH-60P	8	
SA319	6	
UH-1H	7	
<b>SOUTH SUDAN</b>		
<b>SOUTH SUDAN PEOPLE'S AIR FORCE</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
Mi-17	9	
<b>SPAIN</b>		
<b>SPANISH AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
EF-18A/AM	74	
Eurofighter	34	24+13*
<b>Special mission</b>		
707 (ELINT)	1	
C212 (EW)	1	
C212 (SAR)	4	
CL-215 (Firefighting)	14	
CN235 (MPA)	8	
CN235 (Survey)	2	
Falcon 20/200 (EW)	2	
P-3A/M (MPA)	5	
<b>Tanker</b>		
707	2	
KC-130H	5	
<b>Transport</b>		
707	1	

A400M	27	
C-130H	7	
C212	14	
C295/CN235	21	
Citation V	3	
Falcon 20/200	2	
King Air 90	2	
<b>Combat helicopter</b>		
AS332	10	
S-76	2	
SA330	6	
<b>Training aircraft/helicopters</b>		
C-101	66	
EC120	15	
EF-18B	12	
Eurofighter	11	2+1*
F-5M	19	
S-76	6	
T-35	35	
<b>SPANISH ARMY</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
AS332/532	30	
Bell 212	6	
BO105	14	
CH-47D	17	
EC135	5	2
NH90		22+7*
Tiger	6	12
UH-1H	14	
<b>Training aircraft/helicopters</b>		
EC135	7	
<b>SPANISH NAVAL AVIATION</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
EAV-8B+	12	
<b>Transport</b>		
Citation II/VII	4	
<b>Combat helicopter</b>		
Bell 212	7	
MD500	6	
S-61/SH-3H	8	
S-70/SH-60B	10	
<b>Training aircraft/helicopters</b>		
TAV-8B	1	
<b>SRI LANKA</b>		
<b>SRI LANKAN AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
F-7	7	
Kfir	9	
MiG-23	1	
MiG-27	6	
<b>Special mission</b>		
King Air 200 (MPA)	2	
<b>Transport</b>		
An-32	5	
C-130K	2	
MA60		2
Y-12	9	
<b>Combat helicopter</b>		
Bell 206	4	
Bell 212/412	13	
Mi-17/171	15	
Mi-24/35	9	
<b>Training aircraft/helicopters</b>		
FT-7	1	
K-8	5	2*
<b>SRI LANKAN NAVY</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
Mi-171	4	
<b>SUDAN</b>		
<b>SUDAN AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
A-5	20	
F-6	8	
F-7	20	
MiG-21	4	

MiG-23	3	
MiG-29	11	
Su-24	3	
Su-25	15	
<b>Transport</b>		
An-12	7	
An-26	8	
An-30/32	6	
C-130H	1	
DHC-5	1	
Il-76	1	
<b>Combat helicopter</b>		
Bell 205	2	
Bell 212	3	
Mi-2	1	
Mi-8	22	
Mi-24	36	
<b>Training aircraft/helicopters</b>		
K-8	6	
<b>SURINAM</b>		
<b>SURINAM AIR FORCE</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
Dhruv ALH		3
<b>SWAZILAND</b>		
<b>UMBUTFO SWAZILAND DEFENCE FORCE</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
SA316	3	
<b>SWEDEN</b>		
<b>SWEDISH AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
Gripen C	65	9
Gripen E		60
<b>Special mission</b>		
Gulfstream IV (EW)	2	
Saab 340 (AEW)	2	
Saab 340 (Survey)	1	
<b>Tanker</b>		
KC-130H	1	
<b>Transport</b>		
C-130H	5	
Saab 340	1	
Sabreliner	1	
<b>Training aircraft/helicopters</b>		
Gripen D	20	4
PC-21		20*
Saab 105	72	
<b>SWEDISH ARMED FORCES HELICOPTER WING</b>		
Type	Active	Ordered
<b>Combat helicopter</b>		
AS332	9	
AW109	20	
NH90	8	10
S-70/UH-60M	15	
<b>SWITZERLAND</b>		
<b>SWISS AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
F-5E	41	
F/A-18C	26	
<b>Special mission</b>		
DHC-6 (Survey)	1	
King Air 300 (Survey)	1	
<b>Transport</b>		
Beech 1900	1	
PC-6	15	
<b>Combat helicopter</b>		
AS332/532	24	
EC635	18	
<b>Training aircraft/helicopters</b>		
F-5F	12	
F/A-18D	6	
PC-7	28	
PC-9	8	
PC-21	8	
<b>SYRIA</b>		
<b>SYRIAN AIR FORCE</b>		
Type	Active	Ordered





Commonwealth of Australia

Combat aircraft		
MiG-21	53	
MiG-23	90	
MiG-25	2	
MiG-29	20	12
Su-22	42	
Su-24	18	
Transport		
An-26	3	
Combat helicopter		
Ka-28	2	
Mi-2	13	
Mi-8/17	51	
Mi-14	12	
Mi-24/25	28	
SA342	62	
Training aircraft/helicopters		
L-39	66	
Yak-130		36
TAIWAN		
REPUBLIC OF CHINA AIR FORCE		
Type	Active	Ordered
Combat aircraft		
F/RF-5E	23	
F-16A	116	
F-CK-1A/C	102	
Mirage 2000-5EI	47	
Special mission		
Beech 1900 (Recce)	2	
C-130H (EW)	1	
E-2K (AEW)	6	
P-3C (MPA)	4	
S-2 (MPA)	11	
Transport		
C-27J		6*
C-130H	19	

Combat helicopter		
EC225	3	17*
S-70/UH-60A	13	
Training aircraft/helicopters		
AT-3	50	
F-5F	25	
F-16B	28	
F-CK-1B/D	25	
Mirage 2000-5DI	9	
T-34	37	
REPUBLIC OF CHINA ARMY		
Type	Active	Ordered
Combat helicopter		
AH-1W	62	
AH-64E	29	
CH-47D	8	
OH-58	38	
S-70/UH-60M		4+56*
UH-1H	91	
Training aircraft/helicopters		
Bell 206	29	
REPUBLIC OF CHINA NAVY		
Type	Active	Ordered
Combat helicopter		
MD500	8	
S-70	18	
TAJIKISTAN		
TAJIKISTAN AIR FORCE		
Type	Active	Ordered
Transport		
An-26	1	
Combat helicopter		
Mi-17	14	
Mi-24	6	
Training aircraft/helicopters		
L-39	4	

TANZANIA		
TANZANIAN PEOPLE'S DEFENCE FORCE		
Type	Active	Ordered
Combat aircraft		
F-6	3	
F-7	12	
Transport		
An-28	1	
DHC-5	4	
Y-8	2	
Y-12	2	
Combat helicopter		
Bell 412	1	
Training aircraft/helicopters		
FT-6	1	
FT-7	2	
K-8	6	
THAILAND		
ROYAL THAI AIR FORCE		
Type	Active	Ordered
Combat aircraft		
Alpha Jet	19	
F-5E	29	
F-16A	39	
Gripen C	8	
Special mission		
DA42 (Recce)	5	
Learjet 35 (Survey)	1	
P180 (Recce)		1
Saab 340 (AEW)	2	
Transport		
Arava	2	
BT-67	8	
C-130H	12	
HS 748	5	
King Air 90	1	



Nomad 22	14	
PC-6	16	
Saab 340	2	
<b>Combat helicopter</b>		
Bell 412	8	
EC725		6
UH-1H	18	
<b>Training aircraft/helicopters</b>		
DA42	6	
F-5B/F	4	
F-16B	15	
Gripen D	4	
L-39	34	
PC-9	22	
<b>ROYAL THAI ARMY</b>		
Type	Active	Ordered
<b>Transport</b>		
C212	2	
King Air 200	2	
<b>Combat helicopter</b>		
AH-1F	7	
AS550	8	
AW139	2	
Bell 206	25	
Bell 212	51	
CH-47D	6	
EC145 (UH-72A)		5+9*
Mi-17	3	2+1*
S-70/UH-60L/M	10	2
UH-1H	83	
<b>Training aircraft/helicopters</b>		
Enstrom 480	16	
R44	1	
Schweizer 269	44	
<b>ROYAL THAI NAVY</b>		
Type	Active	Ordered
<b>Special mission</b>		
Dornier 228 (MPA)	7	
F27 (MPA)	2	
P-3T (MPA)	1	
<b>Transport</b>		
CL-215	1	
F27	2	
Nomad 24	3	
<b>Combat helicopter</b>		
Bell 212/214	9	
EC645		5
S-70/MH-60S	8	
S-76	4	
Super Lynx 110	2	
<b>TOGO</b>		
<b>TOGOLESE AIR FORCE</b>		
Type	Active	Ordered
<b>Transport</b>		
King Air 200	2	
<b>Training aircraft/helicopters</b>		
Alpha Jet	4	
EMB-326	4	
TB30	3	
<b>TRINIDAD &amp; TOBAGO</b>		
<b>TRINIDAD &amp; TOBAGO AIR GUARD</b>		
Type	Active	Ordered
<b>Special mission</b>		
Metro 23 (MPA)	2	
<b>Combat helicopter</b>		
AW139	4	
<b>TUNISIA</b>		
<b>TUNISIAN AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
F-5E	12	
<b>Transport</b>		
C-130B/H	7	
C-130J	1	1
L-410	3	
<b>Combat helicopter</b>		
AS350	6	
Bell 205	20	
Bell 412	3	
S-61/CH/HH-3E/F	19	

S-70/UH-60M	12	
SA316	8	
SE313	8	
UH-1H/N	11	
<b>Training aircraft/helicopters</b>		
F-5F	3	
L-59	9	
MB-326	10	
SF-260	18	
<b>TURKEY</b>		
<b>TURKISH AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
F/RF-4E	69	
F-16C	154	
F-35A		116*
<b>Special mission</b>		
737 (AEW)	3	1
CN235 (EW)	1	
CN235 (MPA)	1	
<b>Tanker</b>		
KC-135R	7	
<b>Transport</b>		
A400M	1	9
C-130B/E	15	
C160	16	
CN235	43	
<b>Combat helicopter</b>		
AS532	20	
T-70		6
UH-1H	63	
<b>Training aircraft/helicopters</b>		
F-16C/D	87	
Hurkus B		15*
KT-1	40	
NF-5A/B	23	
SF-260	36	
T-38	68	
<b>TURKISH ARMY</b>		
Type	Active	Ordered
<b>Special mission</b>		
King Air 200 (Survey)	2	
<b>Transport</b>		
King Air 200	4	
<b>Combat helicopter</b>		
AH-1P/S/W	55	
AS532	27	
Bell 205	69	
CH-47F		6+8*
OH-58	3	
S-70/T-70	57	31

T129	4	56+31*
UH-1H	86	
<b>Training aircraft/helicopters</b>		
Bell 206	22	
<b>TURKISH NAVY</b>		
Type	Active	Ordered
<b>Special mission</b>		
ATR 72 (MPA)		6
CN235 (MPA)	6	
<b>Transport</b>		
ATR 72	1	1
<b>Combat helicopter</b>		
Bell 212	13	
S-70	24	
<b>TURKMENISTAN</b>		
<b>TURKMENISTAN AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
MiG-29	24	
Su-25	20	
<b>Transport</b>		
An-26	1	
An-74	2	
<b>Combat helicopter</b>		
Mi-17	15	
Mi-24	10	
<b>UGANDA</b>		
<b>UGANDA PEOPLE'S DEFENCE FORCES</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
MiG-21	5	
Su-30MK2	8	4
<b>Combat helicopter</b>		
Bell 206	7	
Mi-17	10	
Mi-35	6	
<b>Training aircraft/helicopters</b>		
L-39	6	
SF-260	4	
<b>UKRAINE</b>		
<b>UKRAINIAN AIR FORCE</b>		
Type	Active	Ordered
<b>Combat aircraft</b>		
MiG-29	19	
Su-24	11	
Su-25	15	
Su-27	16	
<b>Special mission</b>		
An-26 (Recce)	1	
An-30 (Recce)	1	
<b>Transport</b>		



The United Arab Emirates used its Mirage 2000-9s to strike Islamic State militants inside Syria



An-24/26	19	
An-70		3+2*
Il-76	5	
Tu-134	1	
Combat helicopter		
Mi-17	11	
Training aircraft/helicopters		
L-39	40	
Mi-2	1	
UKRAINE ARMY AVIATION		
Type	Active	Ordered
Combat helicopter		
Mi-8/9/17	31	13*
Mi-24/35	34	
UKRAINIAN NAVY		
Type	Active	Ordered
Special mission		
Be-12 (SAR)	2	
Transport		
An-26	2	
Combat helicopter		
Ka-27	5	
Ka-29	4	
Mi-14	4	
UNITED ARAB EMIRATES		
UNITED ARAB EMIRATES AIR FORCE		
Type	Active	Ordered
Combat aircraft		
AT-802	18	
F-16E	54	30*
Mirage 2000-9/EAD/RAD	42	
Special mission		
Dash 8 (MPA)	2	
King Air 90 (Recce)	3	
Saab 340 (AEW)	2	
Tanker		
A330	3	
Transport		
C-17	6	
C-130H/L-100	8	
Cessna 208	8	
CN235	7	
DHC-6	8	
King Air 350	2	
P180	2	
Combat helicopter		
AH-64D/E	30	30*
AS350/550	14	
AS565	13	
AW139	8	
Bell 407	17	28
Bell 412	4	
CH-47C/F	19	5
S-70/UH-60L/M	59	
Training aircraft/helicopters		
AS350	1	
Bell 407	12	
F-16F	22	
G115	12	
Hawk 61/63/102	31	
King Air 90	3	
MB-339	10	
Mirage 2000-9DAD	13	
PC-7	31	
PC-21	25	
UNITED ARAB EMIRATES NAVY		
Type	Active	Ordered
Combat helicopter		
AS332	8	
UNITED KINGDOM		
ROYAL AIR FORCE		
Type	Active	Ordered
Combat aircraft		
Eurofighter Typhoon FGR4	86	42
F-35B	3	5+130*
Tornado GR4	71	
Special mission		
707 (E-3D) (AEW)	6	
BN-2 (Recce)	3	
Global Express (Sentinel R1) (Recce)	5	

King Air 350 (Shadow R1) (Recce)	5	
RC-135W (ELINT)	1	2
Tanker		
A330 (AirTanker)	8	2
Transport		
A400M	1	21
BAe 125	5	
BAe 146	2	
C-17	8	
C-130J	23	
Combat helicopter		
AW101 Merlin HC3/3A	15	
AW109	3	
Bell 412 (SAR)	4	
CH-47 Chinook HC2/3/4/6	49	8
SA330 Puma HC2	19	
Sea King HAR3/A (SAR)	14	
Training aircraft/helicopters		
Eurofighter Typhoon T3	21	
G115 (Babcock)	119	
G120TP (Affinity)		TBC*
Hawk T1	49	
Hawk T2	28	
King Air 200/350	8	
Phenom 300 (Affinity)		TBC*
T-6C (Affinity)		TBC*
Tornado GR4	10	
Tucano T1	40	
ARMY AIR CORPS		
Type	Active	Ordered
Special mission		
BN-2 (Recce)	11	1*
Combat helicopter		
AH-64D Apache AH1	65	
AS365	6	
AW159 Wildcat AH1	20	14
Bell 212	7	
Lynx AH7/9A	29	
SA341	23	
Training aircraft/helicopters		
AS350	10	
Bell 212	1	
BN-2	1	
ROYAL NAVY FLEET AIR ARM		
Type	Active	Ordered
Combat helicopter		
AW101 Merlin HM1/2	28	
AW101 Merlin HC3	2	
AW159 Wildcat HMA1	11	17
Lynx AH7/HMA8	25	
Sea King ASaC 7 (AEW)	10	
Sea King HC4/4+	12	
Sea King HU5 (SAR)	13	
Training aircraft/helicopters		
AS365	2	
Hawk T1	14	
King Air 350	4	
DEFENCE HELICOPTER FLYING SCHOOL		
Type	Active	Ordered
Training aircraft/helicopters		
AS350 (FB Heliservices)	24	
AW139 (FB Heliservices)	1	
Bell 412 (FB Heliservices)	11	
UNITED STATES OF AMERICA		
UNITED STATES AIR FORCE		
Type	Active	Ordered
Combat aircraft		
A-10C	288	
AC-130J	1	
AC-130U/W	29	
B-1	62	
B-2	20	
B-52	78	
F-15C/E	412	
F-16C	811	
F-22	185	
F-35A	46	56+1,660*
Special mission		
707 (Recce)	1	
707 (E-3B/C/G) (AEW)	30	

707 (E-8C) (Recce)	16	
747 (E-4B) (Comms)	4	
Dash 8/E-9 (Recce)	4	
DHC-6 (Recce)	1	
EC-130H (EW)	14	
EC-130J (EW)	7	
Falcon 20/200 (Recce)	2	
Global Express (E-11A) (Comms)	4	
HC-130J (SAR)	11	10+9*
HC-130N/P (SAR)	24	
King Air 350 (MC-12W) (Recce)	41	
Learjet 35 (NC-21) (Recce)	1	
Metro 23 (RC-26) (Recce)	11	
OC-135 (Recce)	2	
PC-12 (U-28) (Recce)	16	
RC-135 (ELINT)	22	
U-2S (Recce)	26	
WC-130J (Weather recce)	10	
WC-135C/W (Monitoring)	2	
Tanker		
767 (KC-46A)		4+175*
KC-135R/T	397	
KC-10	59	
MC-130H/P	39	
MC-130J	19	24+19*
Transport		
757 (C-32B)	2	
An-28	17	
Beech 1900 (C-12J)	4	
C-5A/B/C	64	
C-17	221	
C/LC-130H	275	
C-130J	103	17+27*
C212	1	
CN235	2	
Cessna 208	2	
DHC-6	7	
Dornier 328	17	
G100 Astra (C-38)	2	
Gulfstream III/IV (C-20)	7	
King Air 200	27	
Learjet 35	37	
Metro III (C-26)	1	
PC-12	20	
Combat helicopter		
CV-22	36	10+3*
S-70/HH/MH-60G/U	100	
UH-1N	62	
Training aircraft/helicopters		
707 (E-8C)	1	
Beechjet T-1A	178	
DA20 (DOSS Aviation)	50	
DA40 (DOSS Aviation)	2	
F-15D	34	
F-16D	158	
SR20 (T-53A)	25	
T-6A	449	
T-38A/C	492	
TC-130H	1	
TC-135	3	
TH-1H (UH-1)	37	
TU-2S	5	
UNITED STATES ARMY		
Type	Active	Ordered
Special mission		
Dash 8	7	
DHC-7 (EO-5B) (EW)	8	
DHC-7 (Recce)	2	
King Air 200/300/350 (C/RC-12) (Recce)	82	6*
Transport		
Beech 1900	3	
C-27J	7	
C212	3	
Cessna 208	3	
Citation Encore/Ultra (C-35)	28	
DHC-6	2	
King Air 200/350	106	1+4*
Metro 23 (C-26)	12	
PC-6	1	
Combat helicopter		



Vietnam used Guardian 400s during the hunt for Malaysia Airlines MH370

Viking Air

AH-64D/E	756	19+23*
CH-47D/F/MH-47G	534	45+50*
EC145 (UH-72A)	307	48
MD500 (AH/MH-6)	47	
Mi-8/17	5	
Mi-24	2	
OH-58A/C/D/F	618	
S-70/EH/HH/MH/UH-60	2,165	97+29*
UH-1H	53	
<b>Training aircraft/helicopters</b>		
Bell 206 (TH-67A)	180	
EC145 (UH-72A)		100*
King Air 100/200 (UC-12)	12	
Mi-24	1	
T-6B		4
T-34	4	
<b>UNITED STATES MARINE CORPS</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
AV-8B/+	112	
F-35B/C	30	21+369*
F/A-18A/C/D	193	
<b>Special mission</b>		
EA-6B (EW)	25	
<b>Tanker</b>		
KC-130J	47	4+5*
KC-130T	26	
<b>Transport</b>		
Citation Encore/Sovereign/Ultra (U-35)	12	2
DC-9	2	
Gulfstream IV (C-20)	1	
King Air 200/350 (UC-12)	12	
<b>Combat helicopter</b>		
AH-1W	128	
AH-1Z	33	54+113*
CH/HH-46E	28	
CH-53E	147	
CH-53K		8+201*
MV-22B	204	90+36*
UH-1N	5	

UH-1Y	92	69+12*
<b>Training aircraft/helicopters</b>		
F-5F/N	13	
F/A-18B/C/D	37	
T-34	3	
TAV-8B	16	
<b>UNITED STATES NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
F/A-18A/C	202	
F/A-18E/F	319	49
F-35C	9	17+234*
<b>Special mission</b>		
707 (E-6B) (Comms)	16	
737 (P-8A) (MPA)	24	35+48*
DHC-6 (Recce)	1	
E-2C/D (AEW)	69	36+24*
EA-6B (EW)	16	
EA-18G (EW)	103	32+3*
EP-3E (ELINT)	15	
Gulfstream G550 (Range support)		1*
King Air 350 (EW)	4	
Learjet 35/36 (EW)	2	
Metro 23 (Recce)	1	
NC-130F (Research)	2	
P-3C (MPA)	115	
S-3B (Recce)	2	
<b>Tanker</b>		
KC-130F/R	6	
<b>Transport</b>		
737 (C-40)	14	1
C-2A	35	
C-130T	20	
Gulfstream IV (C-20)	4	
King Air 200 (UC-12)	15	
Metro 23 (C-26)	6	
PC-12NG	1	
Sabreliner	1	
<b>Combat helicopter</b>		
MH-53E	29	

MV/CV-22B	5	7+41*
S-70/EH/HH/MH/UH-60	495	85+70*
UH-1N/Y	2	
<b>Training aircraft/helicopters</b>		
Bell 206 (TH-57A)	117	
EC145 (TH-72A)	5	
F-5F/N	30	
F-16A/B	14	
F/A-18A/B/C/D	146	
F/A-18E/F	169	
King Air 90/200 (T-44/TC-12)	82	
OH-58	3	
T-6A/B/C	233	37+54*
T-34	101	
T-38	10	
T-45A/C	197	
TE-2C	1	
<b>US DEPARTMENT OF DEFENSE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat helicopter</b>		
S-70		260*
<b>URUGUAY</b>		
<b>URUGUAYAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
<b>Combat aircraft</b>		
A-37	5	3
IA-58	5	
<b>Special mission</b>		
C-121 (MPA)	2	
<b>Transport</b>		
C-130B	2	
C-121	1	
EMB-110	2	
EMB-120	1	
Y-12		2*
<b>Combat helicopter</b>		
AS365	2	
Bell 212	3	
UH-1H	3	
<b>Training aircraft/helicopters</b>		



PC-7	4	
SF-260	5	
<b>URUGUAYAN NAVAL AVIATION</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Special mission		
King Air 200 (MPA)	1	
Transport		
King Air 200	1	
Combat helicopter		
AS355	1	
BO105	2	
Training aircraft/helicopters		
T-34	1	
T-35		4*
<b>UZBEKISTAN</b>		
<b>UZBEKISTAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Combat aircraft		
MiG-29	39	
Su-25	20	
Su-27	30	
Transport		
An-12	2	
An-26	4	
Il-76	3	
Combat helicopter		
Mi-8/17	40	
Mi-24/35	25	
Training aircraft/helicopters		
L-39	2	
<b>VENEZUELA</b>		
<b>VENEZUELAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Combat aircraft		
F-16A	10	
OV-10	5	
Su-30MK	24	
Special mission		
Falcon 20/200 (EW)	1	
Metro III (EW)	1	
Tanker		
707	1	
Transport		
C-130H	5	
Cessna 208	4	
Citation II	1	
Dornier 228/NG	3	7
Gulfstream G150		4*
King Air 200/350	4	10*
Metro III	1	
Shorts 360	2	
Y-8	8	
Combat helicopter		
AS332/532	9	
Mi-17	6	
Mi-28		10*
Training aircraft/helicopters		
DA40	1	29
DA42		6
EMB-312	19	
Enstrom 280/480	2	16
F-16B	3	
K-8	15	9*
L-15		24*
SF-260	12	
<b>VENEZUELAN ARMY AVIATION</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Transport		
An-28	11	
Arava	4	
King Air 200	1	
Combat helicopter		
Bell 206	2	
Bell 412	11	
Mi-17	21	
Mi-26	3	
Mi-35	10	
Training aircraft/helicopters		
Bell 206	1	

<b>VENEZUELAN NAVAL AVIATION</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Special mission		
C212 (MPA)	3	
Transport		
C212	3	
Cessna 208	1	
King Air 90/200	2	
Turbo Commander	1	
Combat helicopter		
Bell 212/412	10	
Mi-17	6	
Z-9		8*
Training aircraft/helicopters		
Bell 206	2	
<b>VIETNAM</b>		
<b>VIETNAMESE PEOPLE'S AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Combat aircraft		
MiG-21	144	
Su-22	38	
Su-27/30	35	12
Special mission		
An-28 (MPA)	1	
Transport		
An-26	30	
C295		3
Combat helicopter		
Ka-32	2	
Mi-8/17	88	
Mi-24	25	
UH-1H	15	
Training aircraft/helicopters		
L-39	26	
<b>VIETNAMESE NAVY</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Special mission		
DHC-6 Guardian 400 (MPA/SAR)	3	
Transport		
DHC-6 Guardian 400	2	
Combat helicopter		
EC225	2	
Ka-28	8	
<b>YEMEN</b>		
<b>YEMEN ARAB REPUBLIC AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Combat aircraft		
F-5E	11	
MiG-21	19	
MiG-29	24	32*
Su-22	29	
Special mission		

Cessna 208 (Recce)	2	
<b>Transport</b>		
An-12	1	
An-24/26	8	
CN235	1	
Il-76	1	
<b>Combat helicopter</b>		
Bell 206	1	
Bell 212	4	
Ka-32	3	
Mi-8/17/171	35	
Mi-14	2	
Mi-25/35	14	
UH-1H	4	
Training aircraft/helicopters		
F-5B	2	
L-39	19	
<b>ZAMBIA</b>		
<b>ZAMBIAN AIR FORCE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Combat aircraft		
F-6	8	
MiG-21	10	
Transport		
Dornier 28	5	
MA60	1	
Y-12	8	
Combat helicopter		
Bell 205	14	
Z-9	3	4
Training aircraft/helicopters		
FT-6	2	
K-8	16	
L-15		6
SF-260	6	6
<b>ZIMBABWE</b>		
<b>AIR FORCE OF ZIMBABWE</b>		
<b>Type</b>	<b>Active</b>	<b>Ordered</b>
Combat aircraft		
F-7	7	
MiG-23	3	
Transport		
BN-2	5	
C212	11	
Combat helicopter		
Mi-172	1	
Mi-35	6	
SA316	13	
Training aircraft/helicopters		
Bell 412	9	
K-8	11	
SF-260	28	

## YOURS TO DOWNLOAD

Flightglobal's World Air Forces directory 2015 will be available as a free download from 15 December, brought to you in association with RUAG. To access your copy of our special annual report, visit [flightglobal.com/waf](http://flightglobal.com/waf)

For more information about our Ascend Fleets and MilICAS products, or for a demonstration, go to [flightglobal.com/ascend](http://flightglobal.com/ascend)

Keep up to speed with military procurement plans, key equipment orders and operational developments online by accessing Flightglobal's dedicated defence channel: [flightglobal.com/defence](http://flightglobal.com/defence)



From yuckspeak to tales of yore, send your offcuts to [murdo.morrison@flightglobal.com](mailto:murdo.morrison@flightglobal.com)

## Wheelbarrowing the Beverley

Tom Sheppard writes, in an email entitled “50-ton wheelbarrow”, to say our “paean of praise” for the Short Skyvan’s aesthetics put him in mind of his “wonderful Beverley landing at Farnborough” in 1969.

As the ungainly beast touched down and suspecting brake failure, Sheppard slammed the “four mighty Bristol Centauris into bad-for-the-engines full reverse pitch”.

“‘Nah, mate, nungcrog wivvit. Piler terror’, said the civvy ground engineer,” recalls Sheppard. “Pushing forward on the stick to coax some negative angle of attack was a way of loading the undercarriage to obviate tyre skid. Worked a treat on the floaty Canberras. The flyweight Bev’s huge elevator, though, lifted the back end off the ground, main wheels and all, so the aircraft was tip-toeing along on the nosewheel.”

He remembers the Blackburn troop carrier, manufactured in the late 1950s and operated by the RAF until 1967, as “a barrel of laughs to fly”. He adds: “The aircraft was used for parachute tests at [RAF] Henlow mostly but one of the project officers got the ‘loan’ of an armoured personnel carrier from a contact in the army at Aldershot. What he didn’t say was that it was going to be shackled to three huge parachutes and dropped out the back of the Beverley from 10,000ft! When it left, the Bev leapt joyously skywards 500ft or more!”



Wheely good fun: Sheppard noses into Farnborough in 1969

## Messi dilemma

Poor old Lionel Messi must suffer split loyalties every time he wants to fly through a Middle Eastern hub. The world’s most famous footballer appears in adverts as an ambassador for Turkish Airlines.

Yet every week he plays for Barcelona, whose shirts are emblazoned with the logo of rival Qatar Airways. However, we suspect that on his salary, Lionel can probably stretch to a private jet.



Clash of the airlines

## Bad to worse

When you’re in a hole, stop digging. Poor old Malaysia Airlines has apologised after a Twitter post was deemed in bad taste. “Want to go somewhere, but don’t know where?” was meant to encourage the traveller’s spirit of adventure. But post-MH370 it probably wasn’t the right choice of words.

It isn’t the first time airline staff appear to have missed the last day of the Marketing with Tact course. A few weeks ago

the carrier asked customers to suggest their “Ultimate Bucket List” of holiday destinations.

## Scotch a rumour

Dave Crook quibbles a detail in our items about the Jetstream 31, G-BWWW – now a flying testbed with BAE Systems but previously a corporate shuttle for drinks firm Distillers. Rather than Whiskey Whiskey, he says, “I was told by a passenger who had been flown by Distillers to Edinburgh that the call sign was actually Double Scotch.”

## Chance to Bond

James Bond aviation memorabilia – including the Bede BD-5J personal jet from Octopussy and the helicopter model flown in You Only Live Twice – were among 007 kit that went under the hammer at an auction house in Los Angeles earlier this month. Just bring it back in one piece, James.



Sadly, its Octopussy appearance was the BD-5J’s high point

## Mono menace

Of the new machines built in Germany since the beginning of or immediately before the war, one which is likely to be employed against the Allies is the new Fokker monoplane. This machine is very reminiscent of the French Morane monoplane, from which it differs chiefly in the design of under-carriage.

**100 YEARS AGO**

## Power plays

Great as has been the progress in aircraft design during recent years, it is still true to say that in war that side which has the best engines will in time establish supremacy. Whereas a new type of aircraft can be designed and built in less than a year, no new type of aero engine could possibly be produced in so short a time.

**75 YEARS AGO**

## Arresting account

Following the practice of ejection seat and parachute manufacturers, who log the instances of airmen’s lives being saved by the use of their equipment, the French Aerazur company recently celebrated the 100th success of their nylon arrester barriers.

**50 YEARS AGO**

## Teamwork tension

West German economics minister Erich Riedel has criticised France in an unprecedented attack on its domination of Airbus Industrie. Speaking in Hanover last week, Riedel threatened that West Germany would pull out unless the French attitude changes.

**25 YEARS AGO**

**100-YEAR ARCHIVE**  
Every issue of *Flight* from 1909 onwards can be viewed online at [flightglobal.com/archive](http://flightglobal.com/archive)

## FLIGHT INTERNATIONAL

We welcome your letters on any aspect of the aerospace industry.

Please write to: The Editor, Flight International, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS, UK. Or email [flight.international@flightglobal.com](mailto:flight.international@flightglobal.com)

The opinions on this page do not necessarily represent those of the editor. Letters without a full postal address supplied may not be published. Letters may also be published on [flightglobal.com](http://flightglobal.com) and must be no longer than 250 words.

### China's J-31 – like the F-35 or F-22?

Your report on Airshow China (*Flight International*, 18-24 November) includes a caption that suggests the Shenyang J-31 looks like a Lockheed Martin F-35, but to me it much more resembles an F-22 Raptor.

It is also twin-engined, whereas the F-35 is obviously single-engined, but what makes it more like an F-22 is the trapezoidal, almost triangular, canted vertical tails, where the F-35 has more conventionally shaped, almost vertical fins. The general layout of the wings and tail planes are both very similar on the F-22 and F-35, therefore making the J-31 quite similar to both indeed.

Granted, the inward-facing jet intakes are more like the F-35, but the J-31 lacks the distinctive



Just like an F-35, or F-22?

Rex Features

#### TOP 10 HELICOPTERS

### Why FA-61 must be number one

I find it more than a little surprising to see Igor Sikorsky's late-1930s helicopter as number one on your list of the most influential helicopters of all time.

Granted, you mention one of the designs that should have been higher on this list

– the Focke-Achgelis FA-61, which predated the Sikorsky type by three years, and showed such excellent manoeuvrability that it is to this day the first helicopter to have been flown indoors in front of spectators.

Besides, it set a number of world records that the VS-300, three years later, was unable to beat (except for flight duration); and indeed, by the time the VS-300 was flying free, Focke-Achgelis already had the FA-223 in production. In any case, the "first practical helicopter" was certainly not the VS-300; if anything, it was simply the first that came with a tail rotor.

By the way, you might have mentioned Etienne Oehmichen's No.2, which predated both the Sikorsky and Focke, and was the design that gave Sikorsky the idea of the tail rotor.

**Max Lange**

Bremen, Germany



Rex Features

VS-300: unable to beat records

hump on its back that characterises the F-35's general lines. I'd say the J-31 is more like an F-22 than an F-35. I would be interested in finding out what others think?

**Paul Van Obberghen**

Brussels, Belgium

### A380 has class, even in economy

I would like to endorse what Rev Craig P Smith said regarding the Airbus A380 (*Flight International*, 25 November – 1 December). Having flown the aircraft three times now, I must say how impressed I was, even flying in economy, where the legroom and seat comfort is the best I've experienced.

I'm sure given time more orders for the superjumbo will follow, as more and more people

are flying from Europe to the Far East and Australasia.

**Mark Corfield**

Staveley, Derbyshire, UK

### History repeating

From P27 of the 4-10 November of *Flight International*, rewind to an issue in May 1985, when you published a photo of a British UAV hovering alongside Reagan's S-61 outside the Pentagon.

The ML Aviation Sprite had moved to Washington after successfully completing trials of power line inspection with the Niagara Mohawk Power Corporation in New York state.

The Sprite System had been meticulously designed and rigorously tested, and had achieved compliance with both British military and civilian

airworthiness requirements.

Furthermore, it had several fail-safe systems including two fully independent powerplants (it could hover on just one) and two independent radio links at widely separated frequency bands. The one with the better signal was automatically selected by onboard logic. The aircraft body formed a silvered Faraday cage to prevent interference from outside sources.

Successful trials were carried out in several different countries in adverse weather conditions, including offboard ship.

A number of quickly interchangeable payload packs had been developed by the late 1980s to suit a range of different military and civilian tasks.

Thirty-five different countries were eager to purchase them but an embargo was placed upon their export. Our own military were not allowed to acquire them either.

The UK Civil Aviation Authority prevented their use by electricity boards by saying that although the aircraft would be "locked on" to the power lines by duplex distance measuring equipment, low-flying RAF Tornados and Jaguars would collide with them as they hovered two metres away from inspected insulators.

The RAF told the CAA that that was nonsense but the CAA refused to budge.

**Prof Reg Austin**

By email



Grounded: the Sprite UAV



## Build your career

Try Flightglobal Training's new site for the fastest route to building your aerospace and aviation career

**FG** Flightglobal Training

Training courses to take you there  
[www.flightglobal.com/training](http://www.flightglobal.com/training)



# Jean-Paul Béchat

Engineer and experienced industrial leader who became the first chief executive of Safran, overseeing the difficult merger of heavyweight French companies Snecma and Sagem

The announced merger of state-controlled French engine maker Snecma and privately-owned defence electronics group Sagem 10 years ago may have been greeted by scepticism by analysts and been more about Gallic industrial machismo than smart business. After all, Safran, the seemingly unwieldy conglomerate it created, made everything from photocopiers to unmanned air vehicles. The two seemed far from a natural fit.

But despite expressing personal doubts about the merger, Jean-Paul Béchat, Safran's first chief executive who has died aged 72, insisted the partners in the arranged marriage did have much in common. Those expecting instant cost savings or a range of jointly-developed technologies misunderstood the strategy, he told *Flight International* in an interview at Safran's Paris headquarters in 2005.

"We heard all the comments that there are no synergies between aircraft engines and mobile phones. I agree," said the veteran Snecma executive. "But we have put two trains together and there are places where the carriages are linked." Already, he noted, engineers from both companies were sharing expertise on products such as electrical brakes.

A decade on – and seven years after Béchat left the company under somewhat of a cloud – Safran does feel like a single and successful business under Jean-Paul Herteman, who succeeded Béchat in 2007, albeit one dominated by the previous Snecma businesses such as its CFM International joint venture with General Electric, Labinal, and landing gear specialist Messier-Dowty-Bugatti.

After four decades with Snecma, Béchat's final two years with Safran were not entirely happy ones. Although he steered through the merger and ramped up earnings, there were tensions, including a profits warning in 2006 related to accounting irregularities in the former Sagem business that led to a management restructure. However, there were worries that his departure at the age of 65 would leave the group bereft of its most experienced, capable executive.

"We owe him a lot," his successor said of him when Béchat's death was announced on 24 November. Describing him as a "remarkable industrial leader", Herteman added: "He has played a pivotal role in our efforts to build a robust, high-technology group that has emerged as a leader in its fields and built a solid reputation on international markets."

A graduate of France's Ecole Polytechnique and later Stanford University, Béchat joined Snecma in 1965 and held various engineering and management positions, including responsibility for the Concorde engine nozzle assembly. He was production director, vice president industrial affairs and ran the Hispano-Suiza and the then-Messier-Hispano-Bugatti units, establishing the Franco-UK Messier-Dowty landing gear business in



Béchat played a "pivotal role" in Safran's success

1994 before going on to head Snecma. As head of the state-controlled group, Béchat won plaudits for turning Snecma into an international company, consolidating the CFM partnership with GE that had been established in 1974 and helping to turn that into one of the most successful alliances in the history of commercial aerospace, as sales of Airbus and Boeing narrowbodies and CFM56 engines soared into the mid-2000s.

Writing in a Royal Aeronautical Society newsletter, analyst Howard Wheeldon said the two years Béchat spent building Safran into a "cohesive unit" were "made all the more difficult by differing cultures and through wounds inflicted by management in-fighting, combined with a lack of cohesive strategy and synergy behind the original state-designated merger".

However, he adds: "That Béchat succeeded in doing so against almost all the odds and that he was responsible for laying down the strong foundations for what Safran is today, a powerful well-run aero-engine and defence electronics conglomerate, is to his enormous credit." The Safran he retired from in 2007 was "on a very much firmer footing than he found it". ■

Jean-Paul Béchat, 2 September 1942 – 24 November 2014



Read about the thinking behind Safran's 2014 acquisition of a division of Eaton at [flightglobalimages.safran](http://flightglobalimages.safran)

# EDITORIAL, ADVERTISING, PRODUCTION & READER CONTACTS

## EDITORIAL +44 20 8652 3842

**Quadrant House, The Quadrant,  
Sutton, Surrey, SM2 5AS, UK**  
flight.international@flightglobal.com

**Editor** Murdo Morrison FRAES  
+44 20 8652 4395 murdo.morrison@flightglobal.com  
**Head of Strategic Content/  
Flight Daily News Editor** Dominic Perry  
+44 20 8652 3206 dominic.perry@flightglobal.com  
**Managing Editor/Defence Editor** Craig Hoyle  
+44 20 8652 3834 craig.hoyle@flightglobal.com  
**Business Editor** Dan Thisdell  
+44 20 8652 4491 dan.thisdell@flightglobal.com  
**Operations/Safety Editor** David Learmount  
+44 20 8652 3845 david.learmount@flightglobal.com  
**Business & General Aviation Editor** Kate Sarsfield  
+44 20 8652 3885 kate.sarsfield@flightglobal.com  
**Aerospace and Defence Reporter** Beth Stevenson  
+44 20 8652 4382 beth.stevenson@flightglobal.com  
**Magazine Enquiries** Dawn Hartwell  
+44 20 8652 3315 dawn.hartwell@flightglobal.com

## AIR TRANSPORT TEAM

**Editor Airline Business** Max Kingsley-Jones  
+44 20 8652 3825  
max.kingsley-jones@flightglobal.com  
**Editor Flightglobal Premium News** Graham Dunn  
+44 20 8652 4995 graham.dunn@flightglobal.com  
**Managing Editor** Niall O'Keefe  
+44 20 8652 4007 niall.o'keefe@flightglobal.com  
**Air Transport Editor** David Kaminski-Morrow  
+44 20 8652 3909  
david.kaminski-morrow@flightglobal.com  
**Air Transport/MRO Reporter** Michael Gubisch  
+44 20 8652 8747 michael.gubisch@flightglobal.com  
**Senior Reporter** Oliver Clark  
+44 20 8652 8534 oliver.clark@flightglobal.com

## AMERICAS

**Americas Managing Editor** Stephen Trimble  
+1 703 836 8052 stephen.trimble@flightglobal.com  
**Deputy Americas Editor - Air Transport** Ghim-Lay Yeo  
+1 703 836 9474 ghimlay.yeo@flightglobal.com  
**Air Transport Reporter** Edward Russell  
+1 703 836 1897 edward.russell@flightglobal.com  
**Air Transport Reporter** Jon Hemmerdinger  
+1 703 836 3084 jon.hemmerdinger@flightglobal.com  
**Aviation Reporter** Dan Parsons  
+1 703 836 7442 dan.parsons@flightglobal.com

## ASIA/PACIFIC

**Asia Editor** Greg Waldron  
+65 6780 4314 greg.waldron@flightglobal.com  
**Asia Air Transport Editor** Mavis Toh  
+65 6780 4309 mavis.toh@flightglobal.com  
**Asia Finance Editor** Ellis Taylor  
+65 6780 4307 ellis.taylor@flightglobal.com  
**Reporter** Aaron Chong  
+65 6780 4851 aaron.chong@flightglobal.com

## EUROPE/MIDDLE EAST

**Israel Correspondent** Arie Egozi  
**Russia Correspondent** Vladimir Karnozov

## FLIGHTGLOBAL.COM

**Editor** Stuart Clarke  
+44 20 8652 3835 stuart.clarke@flightglobal.com  
**Web co-ordinator** Rebecca Springate  
+44 20 8652 4641  
rebecca.springate@flightglobal.com

## EDITORIAL PRODUCTION

**Head of Design & Production** Alexis Rendell  
**Global Chief Copy Editor** Lewis Harper  
**Chief Copy Editor, Europe** Dan Bloch  
**Layout Copy Editors** Andy Hemphill, Sophia Huang, Tim Norman, George Norton  
**Global Production Editor** Louise Murrell  
**Deputy Global Production Editor** Rachel Warner  
**Deputy Digital Producer** Damion Diplock  
**Digital Production Editor** Colin Miller  
**Web Production Editor** Andrew Costerton  
**Senior Designer** Lauren Mills  
**Consulting Technical Artist** Tim Hall

## DISPLAY ADVERTISEMENT SALES

**Quadrant House, The Quadrant,  
Sutton, Surrey, SM2 5AS, UK**

**Group Display Sales Manager** Stuart Burgess  
stuart.burgess@flightglobal.com  
**Sales Support** Gillian Cumming  
+44 20 8652 8837 gillian.cumming@rbi.co.uk

## EUROPE

**Sales Manager** Shawn Buck  
+44 20 8652 4998 shawn.buck@flightglobal.com  
**Key Account Manager** Grace Hewitt  
+44 20 8652 3469 grace.hewitt@flightglobal.com

## NORTH & SOUTH AMERICA

**Vice-President, North & South America** Rob Hancock  
+1 703 836 7444 robert.hancock@flightglobal.com  
**Regional Sales Director** Warren McEwan  
+1 703 836 3719 warren.mcewan@flightglobal.com  
**Sales Executive** Kaye Woody  
+1 703 836 7445 kaye.woody@flightglobal.com  
Reed Business Information, 333 N.Fairfax Street,  
Suite 301, Alexandria, VA 22314, USA

## ITALY

**Sales Manager** Riccardo Laureri  
+39 (02) 236 2500 media@laurerassociates.it  
Laureri Associates SRL, Via Vallazze 43,  
20131 Milano, Italy

## ISRAEL

**Sales Executive** Asa Talbar +972 77 562 1900  
Fax: +972 77 562 1903 talbar@talbar.co.il  
Talbar Media, 41 HaGiva'a St, PO Box 3184, Givat  
Ada 37808, Israel

## ASIA/AUSTRALASIA

**Sales Manager** Michael Tang  
+65 6780 4301 michael.tang@flightglobal.com  
Fax: +65 6789 7575  
1 Changi Business Park Crescent,  
#06-01 Plaza 8 @ CBP, Singapore 486025

## RUSSIA & CIS

**Director** Arkady Komarov  
komarov@worldbusinessmedia.ru  
Tel/Fax: +7 (495) 987 3800  
World Business Media, Leningradsky Prospekt, 80,  
Korpus G, Office 807, Moscow 125190, Russia

## CLASSIFIED & RECRUITMENT

**Group Sales Manager** Louise Rees  
+44 20 8652 8425 louise.rees@rbi.co.uk  
**Sales Manager** Sophie Wild  
Sophie.wild@rbi.co.uk

**Recruitment Sales Executive** Katie Mann  
+44 20 8652 4900

Recruitment.services@rbi.co.uk

**Classified Sales Executive** Daniel Brooker  
+44 20 8652 4897

Classified.services@rbi.co.uk

**Key Account Manager - Asia** Michael Tang  
+65 6780 4301

## ADVERTISEMENT PRODUCTION

**Production Manager** Sean Behan  
+44 20 8652 8232 sean.behan@rbi.co.uk  
**Production Manager Classified** Alan Blagrove  
+44 20 8652 4406 alan.blagrove@rbi.co.uk

## MARKETING

**Marketing Director** Justine Gillen  
+44 20 8652 8031  
justine.gillen@flightglobal.com

## DATA TEAM

**Head of Data** Pete Webber  
+44 20 8564 6715  
peter.webber@flightglobal.com  
**Commercial Aviation** Steven Phipps  
+44 20 8564 6797  
steven.phipps@flightglobal.com  
**Defence & GA** John Maloney  
+44 20 8564 6704  
john.maloney@flightglobal.com

## PUBLISHING MANAGEMENT

**Head of Flightglobal** Melanie Robson  
**Executive Director, Content** Mark Pilling

## READER SERVICES

### Subscriptions

Jenny Smith  
Flight International  
Subscriptions, Reed Business Information,  
PO Box 302, Haywards Heath,  
West Sussex, RH16 3DH, UK



### Subscription Enquiries

+44 1444 475682  
Fax +44 1444 445301  
flightinternational.subs@quadrantsubs.com

### Subscription Rates

1 Year: £141/\$225/€174  
2 Years: £239.70/\$382.50/€295.80  
3 Years: £338.40/\$540/€417.60  
Only paid subscriptions available. Cheques  
payable to Flight International

Flight International welcomes unsolicited contributions  
from readers but cannot guarantee to return  
photographs safely.

© and Database Rights 2014 Reed Business Information  
Ltd. All rights reserved. No part of this publication may be  
reproduced, stored in a retrieval system or transmitted in  
any form or by any means, electronic, mechanical,  
photocopying, recording or otherwise, without the prior  
permission in writing of the publishers.



Ascend, a Flightglobal  
advisory service, is a leading  
provider of expert advisory  
and valuations services to  
the global aviation industry. Its specialist, independent  
services inform and shape the strategies of aviation  
businesses worldwide. Ascend offers an unrivalled  
breadth and depth of aviation expertise and experience,  
backed by unique access to robust industry data.  
**www.ascendworldwide.com Tel: +44 20 8564 6700**  
**email: consultancy@ascendworldwide.com**

## FG dashboard

Flightglobal's dashboard is a paid-for news and data  
service for professionals who need to find new  
opportunities or track competition within the air transport  
industry. The service puts a wealth of global intelligence at  
your fingertips, covering everything from airline fleets,  
routes and traffic, through to aircraft finance, industry  
regulation and more. **www.flightglobal.com/dashboard**

## FG Flightglobal Insight

Flightglobal Insight provides a range of tailored research  
reports and analysis, with access to information and  
industry expertise from the unrivalled Flightglobal Premium  
services portfolio. **www.flightglobal.com/insight**  
**Tel: +44 20 8652 3914 email: insight@flightglobal.com**

Registered at the Post Office as a newspaper.  
Published by Reed Business Information Ltd, Quadrant  
House, The Quadrant, Sutton, Surrey SM2 5AS, UK.  
Tel: +44 20 8652 3500.

Newstrade distributed by Marketforce (UK) Ltd, Blue Fin  
Building, 110 Southwark Street, London SE1 0SU, UK.  
Tel: +44 20 3148 3300.

Classified advertising prepress by CCM.  
Printed in Great Britain by Polestar (Colchester) Ltd.

Flight International published weekly 49 issues per year.  
Periodicals postage paid at Rahway, NJ. Postmaster send  
changes to Reed Business Information, c/o Mercury  
International Ltd, 365 Blair Road, Avenel, NJ 07001

This periodical is sold subject to the following conditions:  
namely that it is not, without the written consent of the  
publishers first given, lent, re-sold, hired out or in any  
unauthorised cover by way of trade, or affixed to, or as  
part of, any publication of advertising, literary or pictorial  
matter whatsoever. No part of the content may be stored  
electronically, or reproduced or transmitted in any form  
without the written permission of the Publisher.

ISSN 0015-3710

Part of **rbi** reed business  
information



## EVENTS

### 8-9 January 2015

**International Space Conference**  
Amity University, Noida, India  
aryavartspace.org

### 8-10 February

**Abu Dhabi Air Expo**  
Al Bateen Executive airport, UAE  
abudhabiairexpo.com

### 16-18 February

**Loyalty conference**  
Istanbul, Turkey  
flightglobalevents.com/Loyalty2015

### 18-22 February

**Aero India**  
Air Force Station Yelahanka, Bengaluru  
aeroindia.in

### 24 February - 1 March

**Avalon Airshow**  
Geelong, Australia  
airshow.com.au

### 17-20 March

**Asian Ground Handling  
International Conference**  
Conrad Hotel, Macao  
groundhandling.com

### 23-24 March

**Operating Lease Masterclass**  
Park Plaza County Hall Hotel, London  
everestevents.co.uk/events

### 25 March

**European Corporate Aviation Summit**  
The Broadgate Tower, London  
aeropodium.com

### 20-23 April

**AeroDef Manufacturing**  
Hilton Anatole, Dallas  
aerodefevent.com

### 29-30 April

**Loyalty@Freddie Awards**  
Atlanta, USA  
flightglobalevents.com/  
loyaltyfreddies2015

### 4-7 May

**AUVSI's Unmanned Systems**  
Atlanta, USA  
auvsishow.org

### 10-11 May

**Aviation Africa**  
Dubai, UAE  
aviationafrica.aero

### 19-21 May

**EBACE**  
Geneva, Switzerland  
ebace.aero/2015

### 26-28 May

**AP&M Europe**  
Olympia London, UK  
apmexpo.com

### 31 May - 3 June

**1st International Symposium on  
Sustainable Aviation (ISSA)**  
Istanbul, Turkey  
issasci.org

### 4-6 June

**France Air Expo**  
Lyon-Bron airport, France  
franceairexpo.com

### 15-21 June

**Paris Air Show**  
Le Bourget, Paris  
siae.fr



For a full list of events see  
**flightglobal.com/events**



# CLASSIFIED

**TEL** +44 (0) 20 8652 4897 **FAX** +44 (0) 20 8652 3779 **EMAIL** [classified.services@rbi.co.uk](mailto:classified.services@rbi.co.uk)

Calls may be monitored for training purposes

## New and used aircraft



**Gulfstream®**  
Independent Authorised Sales Representative for the United Kingdom

**Tim Leacock**  
AIRCRAFT SALES LIMITED

+44 (0) 1258 818181 [tim@timleacockaircraft.com](mailto:tim@timleacockaircraft.com) [jonathan@timleacockaircraft.com](mailto:jonathan@timleacockaircraft.com) [timleacockaircraft.com](http://timleacockaircraft.com)

**SkyWorld**  
Aviation

The Regional Aircraft Marketing Specialist

Tel. + 44 1753 832088 [info@skyworld.co.uk](mailto:info@skyworld.co.uk)

## ATR 42/72's for sale or lease

Skyworld Aviation is marketing a portfolio of ATR aircraft for sale and/or lease, with availability starting immediately:

**ATR 42-500 (pax)**

**ATR 72-201/2 (pax)**

**ATR 72-212 (pax)**

**ATR 72-500 (pax)**

**ATR 72-202 (Freight, Class E)**

For more information visit our website [www.skyworld.co.uk](http://www.skyworld.co.uk) or contact Patrick Leopold at [patrick@skyworld.co.uk](mailto:patrick@skyworld.co.uk)  
Tel. + 44 1753 832088



[www.skyworld.co.uk](http://www.skyworld.co.uk)



# Do you have what it takes to become an **airline pilot**?

**easyJet**



CAE Oxford Aviation Academy is partnered with major European airline easyJet to offer a Mentored Airline Pilot Training Programme based on the Multi-Crew Pilot's Licence (MPL). This is an exceptional opportunity to train with CAE Oxford Aviation Academy and then fly with easyJet as a pilot on their fleet of A320 aircraft.

Enrolment for courses will commence from June 2015

**Apply now:**

[www.caeoaa.com/easyjet](http://www.caeoaa.com/easyjet)

**CAE Oxford**  
Aviation Academy

Tel: +44 (0) 1865 84 1234

[oxfordacademy@cae.com](mailto:oxfordacademy@cae.com)

**THE rad AWARDS 25 YEARS**

MOBILE AUDIO VISUAL  
SCHOOL LEAVER 25 YEARS EMPLOYER  
AMBIENT/OUTDOOR WEBSITE  
CANDIDATE INNOVATION  
ENGAGEMENT GRADUATE  
WORK OF THE YEAR WEBSITE  
SOCIAL EMPLOYEE  
PRINT ADVERTISEMENT  
ADVERTISE CAMPAIGN

## RESPECTED FOR A REASON.

**THE CATEGORIES**

- » Audio Visual
- » Best Integrated Campaign
- » Best Print Advertisement
- » Best Use of Mobile
- » Best Use of Social
- » Candidate Engagement
- » Candidate Interaction (Gamification, Competitions)
- » Diversity and Inclusion Initiative
- » Employee Engagement
- » Employer Brand
- » Employer Website
- » Graduate Campaign
- » Graduate Website
- » Innovation
- » Outdoor, Events and Experiential
- » Recruitment Literature
- » School Leaver/Apprenticeship Campaign
- » Work of the Year

**ENTER TODAY**  
ENTRY DEADLINE: 10 OCTOBER 2014

#RAD2015  
@TheRADawards

The RAD Awards | 29 January 2015 | Grosvenor House, London  
**radawards.com**

**HEADLINE SPONSORS**  
Specsavers totalJobs.com

**SPONSORS**  
better placed connective CASUAL FILMS GATLIN BDF fscs  
indeed METRO EVERING Standard NetworkRail Personnel Today

## CRMT Crew Resource Management Trainer Core Course

The CRMT Core course is suitable for delegates who will be appointed CRM trainers for ground, simulator and line training. The course meets the CRM requirements of EASA, CAA and FAA.

The course covers all aspects of current CRM training, including instruction and facilitation techniques, debrief and feedback techniques, NOTECHS and assessment. The course provides the student with the skills and materials to deliver professional CRM training for pilots and cabin crew.

Five day courses commence 12 Jan, 2 Feb, 2 Mar 15 at Global Air Training UK. The course package includes comprehensive trainer manuals, presentations, handouts, resources and copyright license for reproduction and use of the course materials within your airline.

This course is attended by airlines from every continent of the world.

For more info and to book online, Visit: [www.globalairtraining.com](http://www.globalairtraining.com)  
Ph: +44 (0)1829 771 334  
Email: [ops@globalaviation.com](mailto:ops@globalaviation.com)

**GLOBAL AIR TRAINING**



## Tenders



Ref: DACA/W PDP/787-8/2014/

Date: 27-11-2014

## Notice of Request for Proposal (RFP)

## PDP (Pre-Delivery Payment) for financing 04 (four) 787-8 aircraft

01 Biman Bangladesh Airlines Ltd. ("Biman") signed purchase agreements with Boeing Company ("Boeing") for Procurement of 04 (four) 787-8 aircraft. The scheduled delivery of four 787-8 aircraft are October 2019, November 2019, January 2020 and February 2020. Pursuant to the terms of agreement, the Pre-Delivery Payment ("PDP") for the four 787-8 aircraft are to be made in a number of installments commencing 54 months prior to delivery of each aircraft. The details of the PDP with due dates of installments that Biman has to make and other terms and conditions are shown in the RFP schedule and annexure - "A" of RFP schedule. The RFP schedule and Annexure "A" are available in the Biman's Website "Biman-airlines.com". Biman seeks loan offers from reputed financial institutions of home and abroad for PDP financing under a loan.

## 02 Basic requirements of Financing are mentioned below -

Purpose of Financing	Term loan to finance PDP (pre-delivery Payment) of 4 (four) Boeing 787-8 aircrafts.
Estimated Amount of Financing	USD 136.28 million
Term of Loan	54 months i.e from drawdown of PDP, as specified at Annexure "A" to the delivery of respective aircrafts or any other extended period, thereafter, as mutually agreed upon.
Currency of Financing	U.S Dollar

## 03 In your proposal, you are requested to:

- Include interest rate derivatives such as swaps, forward start swap, collars or caps etc. if any,
- Identify in detail the financing structure including any tax implications;
- Identify in detail and cap all margins as well as fees and expenses such as commitment fee, management fee, agency fee, and out of pocket costs/expenses required to be paid by Biman;
- Provide general background information on the institution including specific experience in providing Government supported financing;
- Identify key team members who will be the primary focal point for this transaction;

04 The Proposal(s)/Offer(s) should be dropped at tender box kept in the Controller of Accounts office latest by 1000 hours BST (0400 hours UTC) on 11 Jan' 2015 addressed to Controller of Accounts, Biman Bangladesh Airlines Ltd, Head Office, Balaka, Dhaka. Or e-mail at pdp-787-8@bdbiman.com. The proposal(s)/offer(s) will be opened on the same day immediately after the closing time. No proposal/offer would be accepted after the closing time and date. Biman Bangladesh Airlines Ltd. will not be responsible for late receipt of any proposal/offer due to any reason whatsoever.

05 Biman Bangladesh Airlines Ltd. reserves the right to accept or reject any or all proposal(s)/offer(s) partly or wholly at any time and/or stage without assigning any reason whatsoever and no claim shall be entertained in this regard.

06 Biman Bangladesh Airlines appreciates your interest in considering financing support for these transactions. Should you have any additional requirements for information, please contact Controller of Accounts, Biman Bangladesh Airlines Ltd. at the e-mail address controller@bdbiman.com or office phone number +8802-890-1590 or mobile phone +8802-011-9042-0627.

A. S. M. Monjur Emam FCMA, Controller of Accounts, Biman, Balaka, Dhaka

## Aircraft spares

**alpine** air support  
Dauphin AS.365  
Parts Specialists  
www.alpine.aero  
Tel: +41 52 345 3605

## FLIGHT INTERNATIONAL

To advertise in this classified section:

call +44 (0) 20 8652 4897

fax +44 (0) 20 8652 3779

email classified.services@rbi.co.uk

Please note that calls may be monitored for training purposes

## Business services



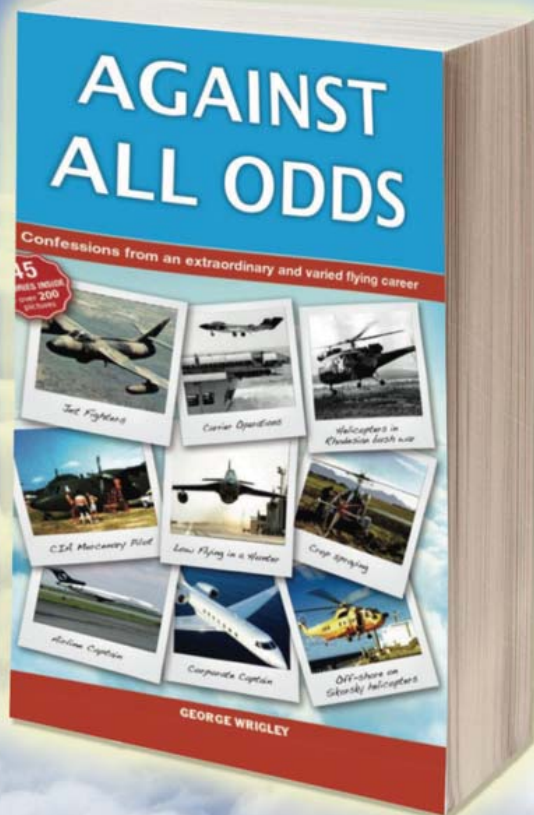
## REGISTER YOUR AIRCRAFT UNDER OUR EUROPEAN AIR OPERATOR CERTIFICATE (AOC)

WE HAVE TURNKEY SOLUTIONS IF YOU WANT TO OPERATE PASSENGER OR CARGO FLIGHTS

IN ADDITION, FULL AIRCRAFT MANAGEMENT FACILITIES ARE AVAILABLE

CONTACT US FOR MORE INFO

00 44 (0) 203 239 9938  
INFO@FLYKAL.COM



Pilots and flying enthusiasts will enjoy this book of forty five stories by George Wrigley, taken from his extraordinary and varied forty year flying career. It is written in a racy style describing experiences, incidents, accidents and numerous narrow escapes as he progressed from his initial training in the Royal Rhodesian Air Force where he became a jet fighter pilot on Hunters, to flying Sea Vixens off HMS Victorious in the Royal Navy Fleet Air Arm. After returning to Rhodesia he flew Hunters, before becoming a Weapons and Flying Instructor. During the Rhodesian bush war, he flew Alouette helicopters on No 7 Helicopter Squadron.

After leaving the Air Force, he did stints crop spraying in both Rhodesia and the Western Cape in South Africa, flying a 47 Bell helicopter. He next qualified as a captain on Sikorsky helicopters doing off shore work to vessels rounding the Cape of Good Hope. He soon took the opportunity to spend an exciting year flying for the CIA from an island in the Caribbean dropping night supplies to the Contras in Nicaragua. When this contract ended, George returned to fly corporate jets for the President of Bophuthatswana and went on to become an Airline Captain in South Africa.

The stories are full of humour, romance and interesting characters he met along the way. It has good descriptions of hands on flying and also relates foolhardy escapades which he survived against all odds. It is packed with over 200 pictures to enjoy.

It is available via Kindle download or as two versions of hardcopies through Amazon at the following hyperlinks:  
<http://www.amazon.com/dp/B00KFCJGVC> or  
<https://www.createspace.com/4909405>



Getting careers off the ground

# flightglobal.com/jobs

EMAIL [recruitment.services@rbi.co.uk](mailto:recruitment.services@rbi.co.uk) CALL +44 (20) 8652 4900 FAX +44 (20) 8652 4877



Flightglobal Jobs

AVIATION CONNECTED

RECRUITMENT

## ENGINEERING

*a world of opportunity*

**AirTanker** is one of the world's most exciting aviation programmes and we offer a diverse range of roles in our unique environment.

As a member of our team, you will be looking after a young fleet of aircraft in modern surroundings, whilst delivering unparalleled support to the RAF and UK armed forces.

We are looking for passionate, driven people to join us in the following roles:

- B1 Engineer
- B2 Engineer
- Avionics mechanic
- Unlicensed mechanic

**Joining AirTanker could be the best decision you ever make.**



**APPLY BEFORE SUNDAY 18 JANUARY**

[www.AirTanker.co.uk](http://www.AirTanker.co.uk)



## Build your career

Try Flightglobal Training's new site for the fastest route to building your aerospace and aviation career



Flightglobal Training

Training courses to take you there  
[www.flightglobal.com/training](http://www.flightglobal.com/training)



expert solutions, adding value



### Online Aviation Training

From an EASA Part 147 Approved Training Organisation

- EWIS (all target groups)
- Human Factors
- Safety Management Systems
- Part 145 & M
- Dangerous Goods by Air
- Fuel Tank Safety

[www.resourcegroup.co.uk/att](http://www.resourcegroup.co.uk/att)  
+44 (0) 1285 772 690

LRTT Ltd trading as Resource Group







## Captain and First Officer Vacancies at SAUDIA

SAUDI ARABIAN AIRLINES, (SAUDIA) is one of the largest national carrier in the Middle East *with international operation to over 100 destinations* is seeking to recruit Captains and First Officers to meet it's expanding fleet and routes for both Domestic & International operations.

Saudia is looking for TR Captains B-777, A-330, A-320 and RJ EMB-170 and First Officers for B-777 and A-330 based out of Jeddah.

**Non-Type rated Pilots** will also be considered under our Bonding Scheme subject to having the required total flight time and command time on **Heavy MEL Glass cockpit commercial/civilian Jet Aircraft**.

All applicants must have either of following Licenses with the appropriate Aircraft endorsements, FAA or JAA/ICAO CAA and **current on flying within last 6 to 9 month**.

Saudia offers a competitive remuneration package which includes: TAX-FREE Salary PLUS flying allowances, range of other attractive benefits and allowances and furnished accommodation.

**Visit our career page at [www.saudiairlines.com](http://www.saudiairlines.com) to apply or learn more about vacancies and remuneration package or arrange a slot for an Interview & Hiring screening.**



#RADS2015  
@TheRADawards

MOBILE AUDIO VISUAL  
SCHOOL LEAVER / APPRENTICE CAMPAIGN  
25 YEARS EMPLOYER WEBSITE  
AMBIENT / OUTDOOR  
EMPLOYMENT CAMPAIGN  
ENGAGEMENT

# BOOK YOUR TABLE TODAY

The RAD Awards | 29 January 2015 | Grosvenor House, London

[radawards.com](http://radawards.com)

HEADLINE SPONSORS



SPONSORS



**Captains**

Lisbon, Porto, Naples  
€Attractive

FOR THOSE WHO  
**DON'T WANT TO  
KEEP THEIR FEET  
ON THE GROUND.**

This is generation **easyJet**

easyJet is one of the biggest airlines in Europe, and we're growing at real pace. There are no signs of us slowing down, so we now need great Captains, who are talented, experienced and ambitious, to join us at our bases in Lisbon, Porto and Naples.

Operating an A320 family aircraft, you'll travel to some of Europe's most challenging destinations, where you'll join an ever-expanding pan-European airline that's revolutionising the way people travel.

With integrity, a genuine passion for flying and great leadership skills, you'll have a real desire to be part of a highly professional and successful team of Captains at these bases and meet these minimum requirements:

- Currently operating as Captain on A320 family aircraft
- Minimum 5,000 total flying hours
- Minimum 1,000 total PIC hours (of which 500 hours are on the A320)
- UK EASA licence (or converted by start date)
- Class 1 unrestricted medical
- Low-visibility Cat IIIB-qualified
- Right to live and work in Europe with unrestricted access across the easyJet network
- Minimum ICAO Level 5 English with requirement to achieve Level 6 within six months of employment

Full eligibility criteria for each role can be found on our website, together with application details. Working for easyJet isn't just about flying planes – it's being part of one of the biggest success stories in modern aviation.

This is generation easyJet. There really is no career like it.

Find out why at **[careers.easyjet.com](https://careers.easyjet.com)**

## Flight crew

RECRUITMENT FOR  
THE AVIATION INDUSTRY

Sigma

AVIATION SERVICES

Tel: +353 1 669 8224

Fax: +353 1 669 8201

Email: recruitment@sigmaaviationservices.com  
www.sigmaaviationservices.com

## Flight crew

>> PROCTOR  
AviationTalk to us for the most exciting  
A320 Expat Pilot Jobsa320@proctoraviation.com  
www.proctoraviation.com +91 22 6120 4400

## Maintenance



Safe Hands

Aviation Recruitment

Call: +44 (0)1524 381 544

Email: info@safhands.aero

www.safhands.aero

you're in safe hands with us

## Engineering

Aviation  
StrongfieldStrongfield  
Specialist Aerospace  
Personnel+44 (0)20 8799 8918 lchauhan@strongfieldtech.com  
www.strongfield.comTechnical  
Recruitment  
Solutionsresource  
group

- Product & System Design
- Project Management
- Manufacturing & Supply Chain
- Engineering & Engineering Management

trs@resourcegroup.co.uk

+44 (0) 1905 368 576

www.resourcegroup.co.uk/trs

Flight  
Crew  
Servicesresource  
group

- Commercial & VIP Recruitment
- Management Recruitment
- Temporary & Permanent
- Payroll

flight@resourcegroup.co.uk

+44 (0) 1256 368 500

www.resourcegroup.co.uk/fcs

## Maintenance

Aviation  
Resourcing  
Servicesresource  
group

- Maintenance Personnel
- Production Personnel
- Temporary & Permanent
- Global Reach

flight@resourcegroup.co.uk

+44 (0) 1638 672 880

www.resourcegroup.co.uk/ars



**AEROPRO**

**APPLY NOW**

- ✈ **FLIGHT DECK**
- ✈ **CABIN CREW**
- ✈ **HEAD OFFICE STAFF**

www.aeroprofessional.com

Build your career



Try Flightglobal  
Training's new site  
for the fastest route  
to building your  
aerospace and  
aviation career

FG Flightglobal Training

Training courses to take you there  
www.flightglobal.com/training

The preferred company for Stress (Fatigue & DT), GFEM, Composites, Aeronautical Research, Business units: Contract staff, Workpackages, Innovation and New Concepts, Aeronautical Research. [www.bishop-gmbh.com](http://www.bishop-gmbh.com)  
Contact [bishop.peter@bishop-gmbh.com](mailto:bishop.peter@bishop-gmbh.com)  
Tel 0049-(0)40-866-258-10 Fax 0049-(0)40-866-258-20

Recruitment  
headache?

Get express relief with  
**THE** industry job site  
at [Jobs.Flightglobal.com](http://Jobs.Flightglobal.com)



Print



Online



Mobile



Flightglobal Jobs

One industry, one job site





## WORK EXPERIENCE VICTORIA GUY

# Fuelling the future of aviation

Victoria Guy uses her international experience to service a global market from London as Shell Aviation's general manager overseeing the company's technology programme from a commercial perspective

## You've always worked for Shell?

I have a degree in manufacturing engineering and business studies from Birmingham University, UK, which was sponsored by Shell. Following my studies, I joined the Shell chemicals business in 1994 and then interspersed strategy and portfolio roles in chemicals, LPG [liquefied petroleum gas] and Shell Europe Oil Products commercial with general manager roles in LPG, bitumen and lubricants. Prior to joining Aviation, I was the general manager for the global process oil, base oil and wax business, managing the transition from a conventional product portfolio to GTL [gas to liquids]. Before that I was the general manager for the lubricants business in Latin America and spent four great years working across Latin America and living in Sao Paulo, Brazil. I joined the Shell Aviation team in February 2014.

## What are your current duties?

My global responsibilities span a wide area, from ensuring high levels of customer service to the safety of our operations. Within this role, I oversee Shell Aviation's technology programme from a commercial perspective. This spans across new fuels, fuel quality and handling, IT systems and processes. Shell Aviation supplies fuel at 800 airports in approximately 40 countries. On average, we refuel an aircraft every 12 seconds. Maintaining safety and operational excellence across this large network is at the core of Shell's aviation



Guy spent four years managing Shell's lubricants arm in Latin America

business and is an exciting task due to geographical coverage and a diverse customer portfolio. We have professional, dedicated teams across the globe, trained to deliver safe and efficient refuelling. We not only ensure high safety and operational standards where we operate, we are also actively involved in industry bodies which set them, including the Joint Inspection Group, Fuel Quality Committee, International Air Transport Association Technical Fuel Group and the Energy Institute.

## Are you helping develop unleaded avgas?

Shell Aviation supplies aviation gasoline directly or through joint ventures to customers across the globe. Due to environmental pressures, the piston-engine aircraft industry and users were seeking an avgas solution that could offer the performance of

100LL [100-octane low-lead] without the lead. After more than a decade of intense research to resolve this challenge, in 2013 Shell launched its first test flight on 100UL Avgas. Through the PAFI [Piston Aviation Fuel Initiative], Shell is working with regulators including the US Federal Aviation Administration and industry forums to develop the body of data necessary to achieve fleet-wide certification. Having recently had the opportunity to enjoy the beauty of a DC-3 that participated in D-Day that is still in regular cargo and passenger service, this project becomes very personal, as it provides the possibility of a positive future for new and legacy piston-energy aircraft.

## What makes one Jet A supplier better than another?

Shell Aviation has an impressive heritage in this industry of

product and technology innovation spanning over a hundred years. We continue to invest significant time and resources into new and improved products, offers and technology that can make a real difference to our customers and to the overall standards of our industry.

## This is a competitive market. What differentiates Shell from its rivals?

A number of things. Firstly, we can serve the industry with a portfolio of quality fuels, lubricants and offer further services that help our customers carry out their businesses as efficiently as possible. Secondly, our strong emphasis on safety, our extensive network and our passionate teams mean that we are a trusted partner. Thirdly, we link customer needs with a strong focus on innovation and technology to enable us to create services and products that make a real difference to our customers. Last but not least, we operate across the supply chain – from product development in the laboratory to refining, shipping, pipelines, trucking, storage and handling and fuelling aircraft. ■



For more employee work experiences, pay a visit to [flightglobal.com/workingweek](http://flightglobal.com/workingweek)

If you would like to feature in Working Week, or you know someone who does, email your pitch to [kate.sarsfield@flightglobal.com](mailto:kate.sarsfield@flightglobal.com)



## Build your career

Try Flightglobal Training's new site for the fastest route to building your aerospace and aviation career



Flightglobal Training

Training courses to take you there  
[www.flightglobal.com/training](http://www.flightglobal.com/training)



**MQ-9 Reaper**

# **COST-EFFECTIVE MULTI-MISSION CAPABLE**

- The most cost-effective and best-valued Remotely Piloted Aircraft (RPA)
- Protects friendly forces and saves lives
- Remotely piloted aircraft avoid putting aircrew in harm's way
- Approaching 1 million flight hours with mission capability rates greater than 90%
- Modular design supports multiple mission payload requirements
- Proven multi-role platform for long endurance Intelligence, Surveillance and Reconnaissance (ISR) missions

